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THE UNIVERSITY OF MINNESOTA

BULLETIN

Vol. XV.

JUNE 10, 1902.

No. 8

TABLE OF CONTENTS.

The College of Dentistry.

Board of Regents,	3
Executive officers,	4
Calendar,	5, 6
The University,	7, 8
Department of Medicine,	9, 10
College of Dentistry,	11
Courses of Instruction,	13
General Information,	20
Fees and Expenses,	24, 25
Students,	27, 28

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MINNEAPOLIS, MINN.

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THE REGISTRAR,

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Minneapolis, Minn

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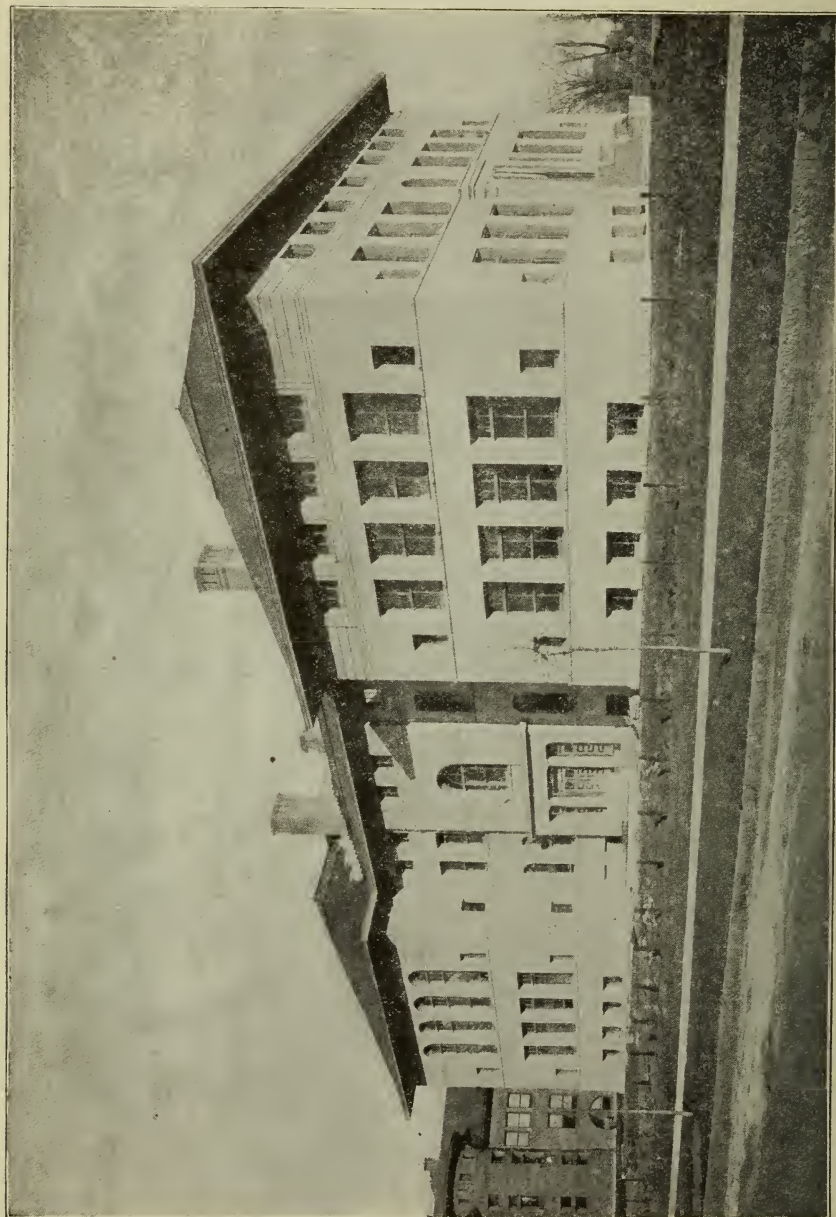
BOOK

CLASS

VOLUME



MEDICAL BUILDING.



LABORATORY OF MEDICAL SCIENCES.

The Board of Regents

*The HON. JOHN S. PILLSBURY, MINNEAPOLIS,				<i>Regent for Life</i>
CYRUS NORTHROP, LL. D., MINNEAPOLIS,	-	-		<i>Ex-Officio</i>
The President of the University.				
The HON. SAMUEL R. VAN SANT, WINONA,	-	-		<i>Ex-Officio</i>
The Governor of the State.				
The HON. JOHN W. OLSEN, ALBERT LEA,	-	-		<i>Ex-Officio</i>
The State Superintendent of Public Instruction.				
The HON. ELMER E. ADAMS, B. A., FERGUS FALLS,	-	-		1902
The HON. THOMAS WILSON, LL. D., ST. PAUL,	-	-	-	1903
The HON. WILLIAM M. LIGGETT, BENSON,	-	-	-	1903
The HON. A. E. RICE, WILLMAR,	-	-	-	1903
The HON. GREENLEAF CLARK, M. A., ST. PAUL,	-	-		1904
President of the Board.				
The HON. THEODORE L. SCHURMEIER, ST. PAUL,	-	-		1904
The HON. STEPHEN MAHONEY, B. A., MINNEAPOLIS,	-			1907
Secretary of the Board				
The HON. O. C. STRICKLER, M. D., NEW ULM,	-	-	-	1907
The HON. JAMES T. WYMAN, MINNEAPOLIS,	-	-	-	1907

*Died October 18th, 1901.

Executive Officers.

THE UNIVERSITY.

CYRUS NORTHROP, LL. D., *President.*

E. BIRD JOHNSON, B. S., *Registrar.*

D. W. SPRAGUE, *Accountant.*

THE COLLEGES.

WILLIAM M. LIGGETT, *Dean of Department of Agriculture.*

WILLIAM S. PATTEE, LL. D., *Dean of the College of Law.*

PARKS RITCHIE, M. D., *Dean of the College of Medicine and Surgery.*

ALONZO P. WILLIAMSON, LL. B., M. D., *Dean of the College of Homeopathic
Medicine and Surgery.*

WILLIAM P. DICKINSON, D. D. S., *Dean of the College of Dentistry.*

FREDERICK J. WULLING, PHM. D., *Dean of the College of Pharmacy.*

WILLIAM R. APPLEBY, M. A., *Dean of the School of Mines.*

FREDERICK D. TUCKER, B. A., *Principal of the School of Agriculture.*

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LETTIE M. CRAFTS, B. L., *Assistant Librarian.*

INA FIRKINS, B. L., *Library Assistant.*

ANNA L. GUTHRIE, B. A., *Library Assistant.*

MARY S. MCINTYRE, B. S., *Librarian of School of Agriculture.*

THOMAS G. LEE, M. D., *Librarian of Department of Medicine.*

WILLIAM FURST, B. S., *Librarian of the College of Law.*

CHRISTOPHER W. HALL, M. A., *Assistant Curator, Geological Museum.*

HENRY F. NACHTRIEB, B. A., *Curator of the Zoological Museum.*

ALLEN W. GUILD, *Superintendent of Buildings.*

College Calendar

FIRST SEMESTER.

SEPTEMBER	16th.	Registration and assignment of seats.
		Entrance examinations, 9 a. m. and 2 p. m.
	17th.	Entrance examinations, 9 a. m.
	18th.	Entrance examinations, 9 a. m.
	18th and 19th.	Examinations for conditions and advanced standing, 9 a. m and 2 p. m.
	20th and 22nd.	Classification of students.
	22nd	Opening lecture.
	23rd.	Lecture and laboratory courses begin.
NOVEMBER	29th.	THANKSGIVING DAY.
DECEMBER	20th.	Holiday vacation begins.
	25th.	CHRISTMAS DAY.
JANUARY	1st.	NEW YEAR'S DAY.
	6th.	Work resumed.
	24th.	First semester ends.
	26th to 31st	Examinations in first, second and third year branches.

SECOND SEMESTER.

FEBRUARY	2nd.	Second semester begins.
	12th.	LINCOLN'S BIRTHDAY—Holiday.
	22d.	WASHINGTON'S BIRTHDAY—Holiday.
MAY	16th.	Second semester ends.
	18th.	Final examinations begin.
	30th.	MEMORIAL DAY.

COMMENCEMENT WEEK.

SUNDAY,	MAY 31st.	BACCALAUREATE SERVICE,	- - - -	3:00 p. m.
MONDAY,	JUNE 1st.	SENIOR CLASS EXERCISES—Announcement by the class.		
TUESDAY,	June 2nd.	Closing Address to the College of Medicine and Surgery.		
WEDNESDAY,	JUNE 3rd.	ALUMNI DAY.		
THURSDAY,	JUNE 4th.	COMMENCEMENT DAY.		
		Graduating Exercises, (Armory),	- - - -	9:00 a. m.
		Alumni Banquet and President's Reception,	-	1:00 p. m.
FRIDAY,	JUNE 5th	SUMMER VACATION BEGINS.		

CALENDAR FOR 1902-1903.

1902.

1903.

JULY.

S.	M.	T.	W.	T.	F.	S.
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
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27	28	29	30	31
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AUGUST.

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SEPTEMBER.

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OCTOBER

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NOVEMBER.

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9	10	11	12	13	14	15
16	17	18	19	20	21	22
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DECEMBER.

S.	M.	T.	W.	T.	F.	S.
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JANUARY.

S.	M.	T.	W.	T.	F.	S.
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FEBRUARY.

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MARCH.

S.	M.	T.	W.	T.	F.	S.
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29	30	31

APRIL.

S.	M.	T.	W.	T.	F.	S.
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19	20	21	22	23	24	25
26	27	28	29	30
..

MAY.

S.	M.	T.	W.	T.	F.	S.
..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31

JUNE.

S.	M.	T.	W.	T.	F.	S.
..	1	2	3	4	5	6
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The University

THE UNIVERSITY OF MINNESOTA comprises the following named colleges, schools and departments:

THE GRADUATE DEPARTMENT.

THE COLLEGE OF SCIENCE LITERATURE AND THE ARTS, including
the School of Technical and Applied Chemistry.

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS.

THE SCHOOL OF MINES.

THE DEPARTMENT OF AGRICULTURE, including:

the College of Agriculture.

the School of Agriculture.

the Dairy School.

THE COLLEGE OF LAW.

THE DEPARTMENT OF MEDICINE, including—

the College of Medicine and Surgery.

the College of Homeopathic Medicine and Surgery.

the College of Dentistry.

the College of Pharmacy.

The Regents of the University have also entrusted to their charge

THE EXPERIMENT STATION, including—

the Main Station at St. Anthony Park.

the Sub-Station at Crookston.

the Sub-Station at Grand Rapids.

THE GEOLOGICAL AND NATURAL HISTORY SURVEY.

THE GRADUATE DEPARTMENT. In each of the colleges, except that of medicine, there are advanced courses of study leading to second degrees. These courses are open to graduates of any reputable college upon presentation of diploma.

In the College of Science, Literature and the Arts, there is a four-year course of study leading to the degree, bachelor of arts. The work of the first two years is elective with certain limitations as to the range of subjects from which the electives are to be chosen. The work of the last two years is entirely elective. The course is so elastic that it permits the student to make the general scope of the course, classical, scientific or literary, to suit the individual purpose.

The School of Technical and Applied Chemistry, leading to the degree of bachelor of arts, is also organized as a part of this college.

A Summer School for Teachers. A six weeks' course of instruction is offered, in various University subjects, for those whose school duties prevent them from taking the regular University courses.

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS offers courses of study, of four years each, in civil, mechanical and electrical engineering leading to the degrees of civil, mechanical and electrical engineer. This college offers a four years' course of study in science and technology leading to the degree of bachelor of science, with an additional year leading to the engineer's degree in the various lines offered in the college. This college also offers graduate work leading to the degree master of science.

THE SCHOOL OF MINES offers a four years' course of study in mining and metallurgy upon completion of which the degrees engineer of mines and metallurgical engineer are conferred.

THE COLLEGE OF AGRICULTURE offers a regular course in agriculture of four years college work. The degree of bachelor of agriculture is conferred on completion of the course.

THE SCHOOL OF AGRICULTURE offers a three years' course of study and is a training school for practical farm life and in domestic economy. The college of agriculture is open to graduates of this school.

The Dairy School offers practical instruction in dairying to those who have had some experience in conducting a dairy.

THE COLLEGE OF LAW offers a three years' course of instruction leading to the degree of bachelor of laws. There is an evening class in this college leading to the same degree. This college offers graduate work leading to the degrees, master of laws, and doctor of civil law.

THE COLLEGE OF MEDICINE AND SURGERY AND THE COLLEGE OF HOMEOPATHIC MEDICINE AND SURGERY offer four years' courses of study of eight and one-half months each. Upon completion of either of the prescribed courses the degree doctor of medicine is conferred.

THE COLLEGE OF DENTISTRY offers a three years' course of study of nine months each. Upon completion of the prescribed course the degree of doctor of dental medicine is conferred.

THE COLLEGE OF PHARMACY offers a two and three years' course of study leading to the degree of pharmaceutical chemist. This college also offers graduate work leading to the degrees, master of pharmacy, and doctor of pharmacy.

SPECIAL COURSES. In each of the colleges, students of an advanced age and adequate preparation, are permitted to pursue, under the direction of the faculty, one or two distinct lines of study.

Bulletins of any department sent free to any address upon application. The full catalogue will be sent only upon receipt of ten cents to cover postage. Address,

THE REGISTRAR,

The University of Minnesota,

Minneapolis, Minn.

The Department of Medicine.

THE DEPARTMENT OF MEDICINE INCLUDES THE FOLLOWING NAMED COLLEGES:

The College of Medicine and Surgery.

The College of Homeopathic Medicine and Surgery.

The College of Dentistry.

The College of Pharmacy.

Each college is distinct in the government of its internal affairs, has its own faculty and an independent curriculum, excepting in the studies of anatomy, physiology, chemistry, histology and embryology. These studies, so far as they are required in each course, are pursued by all the students of the department in common.

BUILDINGS AND EQUIPMENT.

The department is resident in four buildings situated upon the University campus, viz: Medical hall, the laboratory of medical science, the laboratory of chemistry and the laboratory of anatomy.

Medical hall contains the offices of the deans of the college of medicine and surgery, of the college of homeopathic medicine and surgery and of the college of dentistry; the large amphitheatre and lecture rooms of the several colleges, the library and reading room of the department, the laboratory of materia medica, the operating rooms and laboratories of dentistry and the dental infirmary.

The laboratory of medical sciences is a building especially designed for laboratory uses. One wing of the building is occupied by the college of pharmacy and the department of physiology. It contains the office and private laboratory of the dean of the college of pharmacy, the pharmaceutical and botanical laboratories, the laboratory of organic chemistry, with preparation and stock rooms. The office of the secretary of the college of medicine and surgery, a large lecture amphitheatre, especially arranged for demonstrative work, the laboratories of physiology, physiologic chemistry and practical dietetics, and operative surgery are also situated in this wing.

The center and opposite wing are occupied by the departments of histology and embryology, pathology and bacteriology. Each of these branches has its well-lighted laboratories, preparation rooms and private study rooms.

Upon the basement floor are laboratory stock rooms and the animal rooms devoted to physiologic and bacteriologic purposes.

A large laboratory upon the first floor is assigned to the bacteriological work of the State Board of Health.

The laboratory of chemistry is a one-story brick building devoted entirely to the use of this department. It is equipped with amphitheatre, laboratories, preparation rooms, store rooms, and private offices of the professor and assistant professor of chemistry.

The laboratory of anatomy is a new two-story and basement building, 35x60 feet. In the basement are the morgue, injecting room, cold storage vaults and engine and apparatus for the carbon dioxide freezing plant. On the first floor are an amphitheatre seating one hundred and seventy-five students, the private offices of the professors and instructors, a private dissecting room and a small laboratory for research work. The entire second floor is devoted to laboratories for practical work in anatomy.

A clinical building has been recently erected and equipped. It is situated in a part of the city most favorable to the development of an out-door service and, at the same time, accessible to the students. It is of two-stories and covers 40x150 feet. It affords ample floor space for amphitheatres, waiting rooms, dispensary and class rooms for each of the clinical branches. Wards and laboratories, in which section work in medical and surgical diagnosis can be conducted, have been equipped.

The department of medicine is in intimate relationship, through its several faculties, with the hospitals, infirmaries and dispensaries of the cities of Minneapolis and St. Paul. Through these agencies it utilizes, for the benefit of its students, the clinical material of these two large centers of population. The location of the University near the interurban car line enhances the value and convenience of these clinical opportunities.

A medical library, containing some three thousand volumes and supplied with current periodicals, is open to all the students of the department. The collection has been chosen with special regard to the need for reference work and collateral reading. The general library of the University and the public and medical libraries of Minneapolis and St. Paul are also open to the students of this department.

The College of Dentistry

FACULTY.

CYRUS NORTHROP, LL. D., *President.*

WILLIAM P. DICKINSON, D. D. S., Andrus Building. *Dean and Professor of Materia Medica.*

THOMAS B. HARTZELL, M.D., D. M. D., Andrus Building. *Professor of Pathology Therapeutics and Oral Surgery.*

OSCAR A. WEISS, D. M. D., 506 Masonic Temple. *Professor of Prosthetic Dentistry and Orthodontia.*

ALFRED OWRE, D. M. D., M. D., C. M., 401 Masonic Temple. *Professor of Operative Dentistry and Metallurgy.*

CHARLES A. VAN DUZEE, D. D. S., St. Paul. *Clinical Professor of Operative Dentistry.*

CHARLES A. ERDMANN, M. D., 802 Pillsbury Building. *Professor of Anatomy.*

RICHARD O. BEARD, M. D., 812 Pillsbury Building. *Professor of Physiology.*

CHARLES J. BELL, A. B., University of Minnesota. *Professor of Chemistry.*

H. C. CAREL, B. S., *Assistant Professor of Chemistry.*

THOMAS G. LEE, A. M., M. D., University of Minnesota. *Professor of Histology and Embryology.*

WINFIELD S. NICKERSON, Sc. D. *Assistant Professor of Histology.*

FRANK F. WESBROOK, M. A., M. D., C. M., 328 Tenth Ave. S. E. *Professor of Bacteriology and Pathology.*

S. M. WHITE, B. S., M. D., *Assistant Professor of Bacteriology and Pathology.*

FRANK R. WRIGHT, D. D. S., M. D., 403 Pillsbury Building. *Lecturer on Anæsthesia and Chief of Anæsthesia Clinic.*

MARY V. HARTZELL, D. M. D., Andrus Building. *Instructor in Comparative Dental Anatomy.*

H. M. REID, D. D. S., 423 Medical Block. *Instructor in Prosthetic Dentistry.*

E. FRANKLYN HERTZ, D. M.D., Andrus Building. *Instructor in Prosthetic Dentistry, and Dental Anatomy.*

JAMES O. WELLS, A. M., D. M. D., Masonic Temple. *Instructor in Crown and Bridge Work, and Operative Technics.*

MARGARET L. NICKERSON, M. A. *Instructor in Histology.*

H. K. READ, M. D. *Demonstrator of Anatomy.*

M. RUSSELL WILCOX, M. D. *Demonstrator in Physiology.*

Announcement.

The College of Dentistry of the University of Minnesota offers a progressive course of study which covers three terms in three separate calen-years, beginning early in September and closing the last week in May following. Classes are graded as first, second and third year. Students who successfully pursue this course are given the degree D. M. D. (doctor of dental medicine), which entitles them to come before any state board of dental examiners for a license to practice dentistry in that state.

Commencing with the session of 1903-1904 the course will be extended to four school years.

The central idea upon which this institution was founded, is that dentistry is a branch of the healing art, and that the practitioner should possess a medical education, hence the curriculum has been broadened so as to include the fundamental principles that underlie the practice of medicine. In this connection special attention is called to the fact that while a thorough course is required, practical work is not neglected. The technical courses are very complete and the clinical facilities are unsurpassed.

Another special feature of this institution is that in laboratory work and infirmary practice, students at all times operate under competent instructors, the professors themselves serving as demonstrators, and every stage of each operation receives due criticism and marking.

The college of Dentistry of the University of Minnesota is a member of the National Association of Dental Faculties, and its diplomas are recognized by the Dental Examining Boards of every state.

Course of Instruction.

FIRST YEAR.—ANATOMY.

Osteology.

Lectures and recitations upon the human skeleton and supplementary work on the osteology of domestic mammals; three hours each week, for 10 weeks of first semester. Practical study of the skeleton, followed by recitations from the specimen, taken by the class, in sections; 2 hours each section, for 10 weeks, first semester. Required of all first year students.

Syndesmology.

Lectures, recitations and laboratory demonstrations. 3 hours each week, for 4 weeks first semester.

Myology and angiology.

Lectures and recitations covering the entire muscular and arterial systems of the human body, with a supplementary study of comparative myology; 3 hours each week, 16, weeks. Laboratory work consists in identifying the muscles of the human body on dissected preparations and showing their actions. Class, in sections, 4 hours each week, for 5 weeks.

Text-books required:

Quain's Anatomy, tenth addition, Vol. II, parts 1 and 2. Morris' Anatomy.

DENTAL ANATOMY.

The subject is taught by a thorough laboratory course, in which the student studies the teeth by dissection, modelling, carvings and drawings. In the study of dental anatomy, human and comparative, the definition, terminology, notation, form and arrangement of the teeth will be fully considered; also a macroscopic and microscopic characteristics of sections, including the study of the relation of enamel to dentine and of the pulp canal.

In the study of structural anatomy, teeth will be selected and mounted upon wooden blocks. They will be filed down until the pulp chamber and canals are exposed, and drawings from actual measurements of the different aspects will then be made and carefully studied. Opportunity for the study of microscopic sections and lantern slides will also be afforded. The didactic instruction will be illustrated by "chalk talks," lantern slides, lectures, heroic models and skulls.

The standing of the student will be determined by marks given on the cutting of sections, models, drawings, and recitations. Lectures and recitations, covering the influence of form and arrangement of the teeth upon caries, will also be given.

Text-book required—Black's Dental Anatomy.

Collateral reading—American Text-book (Thompson;) Comparative Dental Anatomy (Thompson;) Dental Anatomy, human and comparative (Tomes').

COMPARATIVE DENTAL ANATOMY.

The instruction in this subject embraces a comparative study of animal life, giving special attention to number, form and arrangement of teeth, and their adaptation to food habits, ranging from the horny teeth of invertebrates, to the complex tooth-forms of the most highly specialized animals of the present time. The lectures will be illustrated with the stereopticon, casts, models and skulls. Text-book, Thompson. Collateral reading, Tomes.

PHYSIOLOGY.

The subject is taught by recitations and lectures illustrated by practical demonstrations. These embrace the discussion, and as far as possible, the observation of physiological ingredients of the animal body; of the physiology of cell life or the fundamental properties of the cell; the nutritive media, blood, lymph and chyle; of the elementary functions of the nervous system; of the muscular tissues; and the epithelial tissues; of the vascular mechanism; of the alimentary canal; of the organs of secretion, excretion and respiration.

Text-book required—Foster's Physiology.

HISTOLOGY AND EMBRYOLOGY.

This course will consist of lectures, recitations, laboratory work and demonstrations and will include a study of the structure and properties of protoplasm: the cell, its structure and properties, cell division, reproduction, ovum, spermatozoon, and formation of blastoderm. A study of the structure and life history of certain type forms of unicellular animals and plants, as amoeba paramoecium yeast, spirogyra, etc., simple metazoa, as hydra, etc.; a consideration of the structure of vertebrates; the tissues, as epithelium, connective tissue, cartilage bone, etc., muscle, nerve, blood and lymph; vascular and lymphatic system. The teeth, enamel, dentine, cementum, pulp, etc. A general outline of the development of the embryo; the formation of the head; development of the jaws, teeth, oral cavity, glands, etc.

First semester, recitations, four hours per week; laboratory, six hours per week.

Text-book required—Stohrs' Histology.

CHEMISTRY.

- (a) Lectures on the chemistry of the elements.
- (b) Laboratory work in general inorganic chemistry of non-metallic and metallic elements.
- (c) Lectures on qualitative analysis with special attention to the examination of alloys.
- (d) Laboratory work corresponding to course (c) and including the qualitative determination of bases and acids. In this course several alloys are analyzed by each student.
- (e) Recitations are carried on throughout the year to test the individual knowledge of each student.
- (f) Optional courses are offered in quantitative analysis, water analysis, etc.

Text-books required—Inorganic Chemistry Syllabus and Laboratory Notes on Qualitative Analysis. prepared by the department.

PROSTHETIC DENTISTRY.

The work in this year is almost entirely technical; only such lectures and demonstrations being given, as to enable the student to carry on his work in the laboratory intelligently. The work comprises a consideration of impression materials, taking impressions, and making casts and models, making upper and lower retaining plates for a fellow student's mouth; and after which the upper is broken and repaired; making partial upper plate with rubber base, comprising the making of trial plate, taking bite, mounting case in articulator, grinding and arranging teeth for proper articulation, flasking, packing, vulcanizing and finishing. Making full upper and lower sets of teeth upon rubber base, using plain teeth and arranging same in accordance with the Bonwill law of articulation; making full upper and lower swaged metal plates, comprising the making of models, molding in sand, casting dies and counter-dies; swaging plate to fit model, soldering rim and grinding and polishing metal. Making lower cast-metal plate, comprising the making of models and moulds, casting and polishing.

SECOND YEAR.

ANATOMY.

Splanchnology.

Descriptive and topographical anatomy of the thoracic viscera, the alimentary and urino-genital organs. Lectures and recitations, 3 hours each week, for 10 weeks.

Descriptive and surgical anatomy.

Head, neck, trunk and extremities. Lectures and recitations, 3 hours each week, for 12 weeks.

The nervous system.

Cerebro spinal axis and its membranes; the cranial and spinal nerves; the sympathetic nervous system, and the special-sense organs. Lectures and recitations, 3 hours each week for 8 weeks.

Text-books required.

Morris' Anatomy. Edinger's Anatomy of Brain and Cord.

Dissecting. The work extends over a period of eight weeks, requiring 15 hours each week. The dissection of the entire human body is required. The method of work follows that laid down in Holden's Manual of Dissections.

MATERIA MEDICA.

Pharmacology. This course includes the study of the general characteristics of drugs and their physiological action, with a comprehensive classification and description of remedies employed in dentistry. Lectures, recitations and laboratory work.

PATHOLOGY AND THERAPEUTICS.

The instruction in this branch will begin with a consideration of the terminology belonging to the subject, followed by the presentation of the lesions of inflammation, local and general, and the degenerate change in the tissues.

The general character of tumors, practical consideration of pathological dentition, pyorrhœa alveolaris, pulpitis, pulp nodules, secondary dentine, pericementitis, alveolar abscess, caries of jaw, and necrosis, dependent on a diseased condition of the teeth, the various inflammations of the oral cavity, including syphilis and tuberculosis, will all receive due attention.

Text-book required—Burchard.

Therapeutics. This course is given by lectures and recitations, and clinically. The student being instructed in the special therapeutics of dental and oral diseases; systematic treatment in cases requiring it, receives due consideration. New remedies that give promise of value are fully studied and put to practical test in the infirmary, under direct supervision. Antiseptic and disinfectant methods, as well as dental hygiene, also receives due attention.

OPERATIVE DENTISTRY.

Didactic. Lectures and recitations illustrated by lantern slides, charts, heroic models and physical apparatus will be given on cavity classification and nomenclature, instrument nomenclature and instrumentation, removal of deposits, rubber dam and exclusion of moisture; cavity preparation, the enamel in its relation to cavity margins; sensitive dentine and pulp treatment, conservative and radical; including discoloration, its cause and treatment; canals, their cleansing and filling; matrices; separating teeth and correcting interproximate space; preparation and insertion of filling materials, including inlays; finishing fillings; clinical operations in their relation to vital tissue, including a review of the technic of conservative operations; the conduct of a practice.

Both junior and senior classes attend these lectures and stand quiz. The questions to each class vary according to their work. An examination will be held at the close of each subject.

Technical. The course of technics which is given at the beginning of this year includes the formation of typical cavities in plaster models, vulcanite and ivory teeth; protecting nearly exposed pulps, and capping exposed pulps; gaining access to canals; cleansing and

filling canals with various materials, subsequently examining them to note results; application and retention of the rubber dam; preparing and inserting the various filling materials, gutta percha, cements, amalgams, tin and gold. *This work must be completed in the first semester.*

Clinical. Students enter the infirmary at the beginning of the second semester *if their technic work is complete.* No student will be assigned patients until this work is completed.

Before beginning work upon patients, students are given an "infirmary drill" in which they are taught to meet patients, adjust the chair, make examinations, remove deposits and cleanse the teeth, and apply the rubber dam. In the Infirmary, students are under the immediate supervision of the instructors of this branch, who teach them how to diagnose, treat, and prognose cases, beginning with those requiring the simplest service and progressing as their skill increases. This intimate association of the technical and clinical enhances the value of the former and facilitates progress in the latter. Each operation is first presented to the student by a demonstration given by the instructor.

Text books required. American Text Book Operative Dentistry, Reference, Johnson's Principles and Practice of Filling Teeth.

PROSTHETIC DENTISTRY.

Didactic. Lectures and recitations will cover the preparation of the mouth for artificial dentures, choice of impression materials, the various base-plates, their composition and preparation. Porcelain teeth, their composition, form and color as related to temperamental types, and their forms as adapted to the various base-plates.

The various methods of retention, and the indications and uses of the different forms of partial plates is fully considered.

Technical. Making upper swaged plate of german silver, mounting plain teeth thereon to articulate with model of lower natural teeth. Making upper combination swaged metal and rubber plate, mounting gum-section teeth thereon to articulate with lower cast metal plate. Making partial lower swaged metal plate with reinforcement and clasps. Making partial upper swaged metal plate with teeth attached by soldering. Making lower cast metal plate casting metal around lingual side of teeth and forming gum upon labial and buccal sides with pink rubber. Making lower swaged aluminum plate with turned rim.

Clinical. The student enters the infirmary this year upon completion of the technic course, and puts into practice the principles there acquired.

Text-book required. Essig's American Text-book of Prosthetic Dentistry.

ORTHODONTIA.

The work in this year is technical, with such lectures and demonstrations as will enable the student to perform the laboratory work. In addition to this, the student will be required to attend the lectures given the third year class, so that upon entering the senior year to carry on a clinical case, he will have a general idea of the practice of orthodontia.

The technic course is thorough and complete in its scope, it being deemed necessary that the student should have the requisite skill to make regulating appliances, in order to properly place them in the mouth; in other words, it requires no more skill to make appliances than should be possessed to correctly place and operate them.

Furthermore, no system of "ready-made" appliances is considered wholly adequate or best adapted for the correction of all irregularities, thus the necessity for making them.

The technic work in this year includes a consideration of material for regulating appliances. German silver, its properties, annealing and tempering; drawing wire, making tubing and band material; constructing bands with screw; jack-screws of different forms, rotation and expansion appliances, retractors and retainers.

The properties of steel, forging, hardening, tempering and polishing, the making of excavators and chisels, band drivers, band removers and wrenches or keys. Making taps for threading nuts, etc. Each operation is performed by the student after a demonstration by the teacher,

Text-book required. Guilford's Orthodontia.

CROWN AND BRIDGE-WORK.

Didactic. Lectures and recitations will cover the subject of crown and bridge-work.

All forms of crowns and bridges will be taken up in order, and considered from theoretical and practical view-points.

Technical. The technics are arranged so that each student is required to construct in the laboratory, one of the more important forms of crowns and dummies, with root preparation for the former, and to assemble the same in bridges.

The complete technics illustrate the following types of crowns and dummies; the shell crown, the shell crown with porcelain face; the Richmond crown; the same with removable porcelain face; the Logan crown, with and without band; partial crowns for lingual attachment; porcelain crowns for incisors and cuspids, and the same for bicuspid, and molars. Porcelain-faced dummies for bicuspid and molars, and the same with removable facings. Solid metal dummies for bicuspid and molars, and porcelain-faced saddle faced dummies for incisors and cuspids, and the same with removable facings.

STUDENTS' DENTAL SOCIETY.

The second year students will be required to attend the meetings of the students' dental society, to familiarize themselves with the proceedings of such bodies.

THIRD YEAR.

BACTERIOLOGY AND PATHOLOGY.

Bacteriology. Lectures, recitations and laboratory work, a short, general survey of the problems brought to light by bacteriology, and general methods and technique involved, will be followed by special study of certain microorganisms, such as pyogenic cocci, B. tuberculosis, B. diphtheriæ, etc. These studies will be pursued by means of actual cultivation on the various media, the making and examination of microscopic preparations of pure culture, and both cultivation from and microscopic examinations of infected tissues and fluids of the body, by the students themselves.

Text-Book: Muir & Ritchie.

Pathology. Lectures, recitations and laboratory work. Special study of inflammations and the histological changes occurring in the tissues and fluids, constitutes the major portion of this course. Some attention is given to the degenerations and the subject of tumors with special reference to the face and oral cavity. Students prepare and examine many of the specimens and receive loan slides of the rarer types, or those difficult of preparation.

ORAL SURGERY.

The subject of oral surgery will be taught clinically and didactically. The large amount of clinical material presenting at the infirmary, furnishes ample opportunity for practical demonstrations. Students are required to take charge of cases and carry them through under the advice of the instructor in charge. The didactic lectures will include a full consideration of all the surgical lesions of the oral cavity and associate parts, including oral tumors and the reflex neuroses connected with the fifth pair of nerves; fractures of the maxilla; cleft palate and hare-lip; caries and necrosis of the jaws from constitutional causes; adenoid growths and nasal polypi in their relation to oral surgery; suppuration of the antrum; ulitis; epulis; growths; fungoid pulp; ranula; exostosed teeth; ankylosis and dislocations, implantations, obturators, interdental and other forms of dental splints.

Arrangements have been made with several clinicians connected with the different hospitals of the city to give several clinics. An abundance of material representing all the different forms of diseased conditions of the mouth and associate parts is to be found in the infirmary service, which will be assigned to students for treatment under direction of the professor of oral surgery.

Clinical lectures on the cases presented will be given from time to time. These cases include alveo-dental abscesses; caries and necrosis of the maxillary bones; diseased condition of the antrum; pyorrhœa-alveolaris; dislocations and ankylosis; facial neuralgias; tumors of the mouth and associate parts, hare-lip; cleft-palate; implantation cases and fractures.

Text-book required. Marshall's Oral surgery.

ORTHODONTIA.

Didactic. Lectures and recitations upon the classification of irregularities of the teeth; etiology, local and constitutional; evils arising therefrom; advisability of correction; methods of treatment, including a consideration of the positive or intermittent and constant forces.

The principles of application of force and anchorage, are given special consideration, rather than appliances.

Retention and methods of accomplishing the same are fully considered.

Clinical. In this year an ample clinic affords opportunity for each student to treat cases of irregularity.

The correction of at least one case by each student is required. The student is also required to observe and inspect the cases of his classmates, thus enabling him to see a large variety of cases with their treatment.

The student will use such of the technic appliances as are adapted to the case in hand and make such new ones from the material left over from the previous year, as the case may require.

Text-book. Guilford's Orthodontia.

OPERATIVE DENTISTRY.

Didactic. The lectures on operative dentistry are delivered to both second and third year classes. All will be required to attend and stand 'quiz.' The questions to the senior class will bear more upon the application of principles in practice. An examination will be held at the conclusion of each subject.

Clinical. Many clinics demonstrating advanced operations and peculiar methods are given in this year. The student has ample opportunity to put these methods into practice; he will also give special attention to the different forms of pathological lesions that pertain to daily office practice, and will carry cases to completion, including the restoration of the teeth to usefulness by filling, crowning or bridging, as the case may require. All operations will be marked and record so made, together with a written examination on the didactic work, will form the final test in this branch.

Text-book required. Kirk's American Text Book of Operative Dentistry.

Reference. Johnson's Principles and Practice of Filling Teeth.

PROSTHETIC DENTISTRY

Didactic. Lectures and recitations upon the use, construction and adjustment of obturators and artificial vela in the treatment of cleft-palate cases. Continuous-gum work; construction and uses, will be fully illustrated and demonstrated.

Clinical. An excellent clinic is provided, enabling each student to make not less than twelve dentures, covering the various conditions usually met with in general practice. Cases of unusual occurrence appearing in the clinic will be utilized as special clinics for the advantage of the entire class.

Text-book. Essig's American Text-Book of Prosthetic Dentistry.

PORCELAIN INLAYS.

Didactic. Lectures and recitations will be given on the indication for inlays, the character and manipulation of the porcelain bodies, cavity preparation, forming the matrix, baking and setting the inlay.

Technical. Each student will be required to make at least one inlay in an extracted tooth.

METALLURGY.

Didactic. This subject will be treated in the following order: Metallurgical terms, processes, and the principles upon which they are based; the various metals and their ores; process of extraction and refining; their properties and application in the arts, especially

in dentistry; alloys, general, and those used in dental amalgams. Lectures and recitations once a week throughout the year, written quizzes monthly.

Technical. Refining of gold and silver, producing pure metals from scraps and filings. Making alloys for plate, crown and bridge-work, solders and alloys for dental amalgams.

Special attention is given to the melting, casting, cutting, annealing and testing of dental amalgam alloys. Each student will be required to provide metal scraps for refining and metals for amalgam alloys, with which to produce by the processes named, metals and alloys which shall be retained by him for future use.

Text-book required. Hodgen's Practical Dental Metallurgy,

CROWN AND BRIDGE-WORK.

Technical. The construction of porcelain crowns and bridges, and crowns with attachments for the rigid retention of the same.

Clinical. The student in this year will preform practical operation in the mouth, covering all forms of crown and bridge-work.

Text-book required. Essig's American Text-book of Prosthetic Dentistry,

PHYSICAL DIAGNOSIS AND ANÆSTHESIA.

The subject of physical diagnosis will be taught didactically and practically, and will have direct bearing upon the subject of anæsthesia and will be as complete as its importance demands. A course of urinalysis will be given in connection with this course.

The technics of anæsthetics, both general and local, receive full consideration. All anæsthetics are administered in the clinic, and full instruction concerning their use is given. The members of the senior class are required, under direction, to administer them and extract teeth under these agents.

Text-books required. Tyson, Physical Diagnosis and Turnbull's Manual of Anæsthetics.

DENTAL JURISPRUDENCE.

A course of lectures will be given upon the special duties, obligations and privileges, of professional men, with respect to their patients, fellow practitioners and the general public. Laws relating to expert witnesses, cases of alleged malpractice, liabilities incurred from septic infection, etc., will have due consideration.

The enactments regarding the attainment of legal standing as practitioners in Minnesota and other states will also be fully explained.

USES OF ELECTRICITY IN DENTISTRY.

A course of laboratory instruction will be given upon the different forms of batteries, dynamos and motors in use in dental practice. Their construction, use, care and operation. Electricity as used in surgery, and for therapeutic purposes, including application of the x rays, will be made clear by laboratory demonstrations and practical application.

STUDENTS' DENTAL SOCIETY.

In this year a society is organized, which is under the direct supervision of the faculty, and is made a part of the course of instruction. Every third year student is required to prepare an original paper upon some dental, or allied topic, to be read before and discussed in open meeting. The meetings will commence the first week in November.

RECAPITULATION.

FIRST YEAR.

Anatomy—Lectures and recitations.

Physiology—Lectures and recitations.

Histology and embryology—Lectures and laboratory.

Chemistry—Lectures and laboratory.

Dental anatomy—Lectures and laboratory.

Comparative dental anatomy—Lectures and recitations.

Prosthetic technics—Laboratory.

SECOND YEAR.

Anatomy—Lectures and laboratory.
 Pathology—Lectures and recitations.
 Materia medica—Lectures and laboratory.
 Therapeutics—Lectures, recitations and clinical.
 Operative dentistry—Lectures, technical and clinical.
 Orthodontia—Technical.
 Crown and bridge-work—Lectures, recitations and technical.
 Students' dental society.

THIRD YEAR.

Bacteriology—Lectures, recitation and laboratory.
 Oral surgery,
 Physical diagnosis, } Lectures and clinical.
 Anæsthesia, }
 Orthodontia—Lectures, technics and clinical.
 Operative dentistry—Lectures and clinical.
 Prosthetic dentistry—Lectures technical and clinical.
 Crown and bridge-work—Technical and clinical.
 Metallurgy—Lectures and technical.
 Dental jurisprudence.
 Electricity—Uses in dentistry.

GENERAL INFORMATION.

THE COLLEGE YEAR.

The fifteenth annual session of this college opens Tuesday, September 16th, 1902, and closes on Thursday, May 28th, 1903.

The college year will be divided into semesters, the first ending January 24th, 1902. The succeeding week will be devoted to the mid-winter examinations. The second semester begins Monday, February 2d. The lecture courses will close May 16th, and the final examinations of the year begin on Monday, May 18.

Practical work for both the senior and junior classes will continue until May 28th.

The technic and laboratory courses begin Tuesday, September 23d.

Commencement exercises will occur in common with the other departments of the University on Thursday, June 4th, 1903.

All statements in this announcement as to courses of study, conditions, requirements or fees, have reference to or binding force only upon the session of 1902-1903, unless otherwise definitely stated.

QUALIFICATIONS FOR MATRICULATION.

The requirements for admission to the College of Dentistry are credit certificates showing the satisfactory completion of two years high school work or its equivalent, and a credit in manual training. Failing to have the latter, the prospective student will be required to demonstrate the possession of mechanical capability.

Students wishing to matriculate in this school, must present credentials signed by a city, county or state superintendent of schools, a principal of an accredited high school or academy, or the state high school board.

Regulation blanks, upon which to make out these certificates, will be sent upon request.

Students not having the above credentials, or an insufficient number of them, may take examinations before a committee appointed by the president, from the college of science, literature and the arts, of the University.

Examinations are held only in the English language.

ENROLLMENT.

The last day of enrollment for the session of 1902-1903, will be Tuesday, September 16th.

Students will be assigned seats in order of, and at the time of their matriculation. Such matriculation and assignment of seats will be had in the office of the registrar of the University, in the library building. Students will then present themselves for examination; or for the approval of their evidence of preliminary qualification. Having received an entrance certificate from this committee, they will report to the dean of the college for admission and classification.

Seats in the amphitheatre, laboratory benches and lockers, as well as chair and lockers in the infirmary, are assigned to students in the order of their matriculation, when so assigned must not be exchanged for others without permission and registration.

Lockers and drawers are provided for the convenience of students, but the college will not be responsible for any personal losses of students.

ADVANCED STANDING.

Applicants for advanced standing must pass the entrance examinations or present the usual equivalents.

They must furnish satisfactory evidence of time spent and subjects covered in previous professional studies and must present themselves upon the dates following, and pass the examinations of all departments in which they wish to be exempt, if such examinations are deemed necessary by the professors in charge of the various departments.

All certificates pertaining to advanced standing must be presented to the dean who will send them to the respective professors for acceptance, or report of further requirements for acceptance.

No conditions of advanced standing will entitle the student to take the two years of any graded study coincidentally.

Students will not be permitted to substitute private work in any branch for the regular college course work, excepting in the case of actual laboratory exercises done under the direct supervision of an instructor in the department, appointed by the chair and approved by the faculty. Examinations in such private laboratory work will be conducted by the chair.

Attendance upon all lectures, and infirmary and laboratory hours as scheduled, is obligatory. A complete record of each student's attendance is kept, and all absences and tardinesses are noted.

All laboratory courses must be taken in full and must invariably be entered during the first week in which they begin.

Habitual absence, continued indifference to study, or persistently poor scholarship may subject the student to temporary or permanent suspension.

The practice of dentistry by students, except under the direct superintendence of a preceptor, is prohibited by law in the State of Minnesota and a rule of the National Association of Dental Faculties to which this college belongs, reads as follows: "Students in attendance in colleges of this association are required to obey the laws regulating the practice of dentistry in the various states, and, failing to do this, shall not be again received into any college of this association." Any student detected in violating this rule will be suspended or expelled.

The connection of any student with this college may be terminated at any time, without a return of fees, whenever such action may be advisable on the ground of immorality, or disorderly conduct, or a failure to conform to the established rules.

BREAKAGE AND LOSS.

A deposit of five dollars (\$5.00) will be required in addition to the first semester fee, to cover loss of and breakage or damage to college property. This will be returned at the end of the year, providing there is no charge against the student. This fee is to be deposited with the accountant each year when the student matriculates.

In the chemical laboratory course, the student is assigned a certain amount of apparatus and material, for which a receipt is required.

For apparatus and material attaching to his laboratory desk, he is held responsible. At the end of each course, if such apparatus and material are restored in good condition, this receipt will be returned to him.

All apparatus lost or damaged in any laboratory, and all injury to, or destruction of university property, by any student, will be charged to him and must be paid for before he can receive credit for his course. A statement of these charges will be submitted to the accountant, and such breakage and loss fees will be deducted by him from the breakage and loss deposit.

In cases when the damage to college or university property cannot be placed upon an individual, or when the student is shielded by his class, the charge will be assessed to the class.

TECHNICS.

One issue for each piece of work will be made by the college, which, in case of failure, loss, damage or destruction, must be replaced by the student.

The completed work may be retained by the student, upon payment of cost of materials.

No student can take advanced work in operative dentistry, prosthetic dentistry or orthodontia, until the technic work of the branch is completed.

INSTRUMENTS, BOOKS, TOOLS AND MATERIALS.

All students are required to provide themselves with instruments, books, tools and materials as prescribed by the college. These can be obtained in the city, with the usual discount to students. The first installment must be procured and approved by the instructor before seats can be assigned to the technic laboratories.

COLLEGE MUSEUM.

Members of the dental profession, and others interested, are invited to contribute pathological specimens, casts of malformations, irregularities of the teeth, models, charts, drawings, etc., which may be useful as illustrative matter in the lecture rooms.

ALUMNI ASSOCIATION.

An association of the graduates of the college has its annual meeting during commencement week.

CLINICAL FACILITIES.

The opportunities for acquiring a practical knowledge of both operative and prosthetic procedures is unsurpassed, the material presenting in the infirmary clinic being more than ample for all purposes of instruction.

GRADUATION.

At the close of the third year, a student who has passed all examinations satisfactorily, receives the degree of Doctor of Dental Medicine, (D. M. D.) upon the following conditions:

He must be twenty-one years of age.

He must have attended three full courses of instruction, the last of which must have been in this college.

He must have passed the full requirement in dissections and must have performed satisfactorily in the college all the required operations in operative and prosthetic dentistry.

Immorality, disorderly conduct, or a failure to conform to the rules of the college, will be deemed a sufficient bar to any student receiving his degree.

Under no circumstances are degrees *in absentia* conferred by this college.

Students failing to graduate will be required to pay a fee for completing unfinished work.

FEES AND EXPENSES.

The annual fee, which includes all charges for matriculation, lecture and laboratory courses, and dissections is, one hundred dollars, (\$100.00.)

One-half of this fee will be payable when the student matriculates. The accountant's receipt for the portion will entitle the holder to take entrance examinations and to classify. The second half will be payable at the opening of the second semester. These receipts must be presented to, and countersigned by the Dean before entering upon the work of each semester.

There is no fee for diploma upon graduation.

If the applicant fails to pass the entrance examinations, his fee will be returned by the accountant.

In addition to the college fee there is a rental fee of \$2.00 for a microscope, in each semester when its use is required, provided the student is not supplied with a satisfactory instrument.

There is also a rental fee of \$1.00 for microscope in the course of bacteriology in the third year. It is an advantage for the student to possess his own microscope, and assistance in the selection of one will be given when desired.

There are no free scholarships, and no students are received for less than the regular fee.

No student will be permitted to take final examinations until after all fees and charges have been paid.

After having entered upon the course of study, fees are not returnable, and no rebate will be recommended should a student discontinue work, but the faculty may recommend the application of a part to the succeeding year.

Senior students failing to graduate, will be required to pay a fee of ten dollars (\$10.00) for each subject examined in, subsequent to the close of the session in which the failure occurred. A fee of \$10.00 will also be charged for the completion of each branch of unfinished laboratory or practical work.

Rooms and board convenient to the college can be obtained at prices ranging from \$3.00 to \$5.00 per week according to accommodations.

Furnished rooms without board, from \$5.00 to \$10.00, and unfurnished rooms from \$4.00 to \$7.00 per month.

A list of rooms and boarding places is kept by the secretary of the University Y. M. C. A., to whom inquiries or applications may be addressed.

From one hundred and fifty to one hundred and seventy-five dollars are necessary to defray the expenses of the first month. These include tuition, for first semester, board and room for the month, and books, instruments, tools and materials for the year, which must be purchased before commencing work. In order to avoid embarrassment the student should bring sufficient funds to cover these first expenses.

For blank forms, relating to admission, or further information, address Dr. W. P. DICKINSON, Andrus Building, Minneapolis, Minn.

Students.

GRADUATES—CLASS 1901—30.

Ball, Wm. Harrison.
Bordeen, Albin.
Borwnlee, Wilbert James.
Child, Harry Burr.
Cox, Norman J
Creelman, Ernest Everett.
Dahlgren, Bror Eric.
Doheny, Edward.
Frodeen, Henry Emanuel.
Holmberg, John Louis.
Holmgren, Carl Johan.
Jargo, Adam Boorman.
Johnson, Martin Calvin.
Jaehning, Herman, Schmal.
Moody, Adolf.

Nelson, Orrin Chauncey.
Olson, Adolf.
Osterberg, Alfred.
Owens, John Evans.
Pepper, Fredrick Wm.
Rhame, Walter Stevens.
Sargent, Will Ernest.
Stoudt, Frank Lawrence.
Sweet, Cyril Fairman.
Thiebaud, James Earl.
*Thompson, Thomas L.
Thorsen, Adolph Theodore.
Woehler, William Winfred.
Works, William Joseph.
Yates, Cecil Fred.

*Died July 20, 1901.

DIPLOMAS GRANTED BY THE BOARD OF REGENTS UPON COMPLETION OF WORK—5.

Billings, Wall M.
Kennedy, John Duncan.

McNerthney, Michael J.
Palmer, Ralph G.

Smith, Ai Biley.

THIRD YEAR CLASS—33

Allen, Arthur Barrett, Grafton, Ill.
Bacon, Dexter Sterling, Cannon Falls.
Bettschen, William Farnsworth, Berlin.
Beede, Thad Sheridan, Minneapolis.
Bolstad, Ole, Minneapolis.
Caine, William Allen, Minneapolis.
Carter, Cyrus Joseph, Minneapolis.
Crandall, Charles Ray, Etter.
Fish, Lawrence James, Minneapolis.
Gunderson, Julius Lavine, Kenyon.
Hickman, Carl Edward, Minneapolis.
Johnson, Nelson Lionel, Renville.
Jorgens, Carl Sophus, Minneapolis.
Kaliher, Eugene William, Lake Freemont.
Lindsley, William Sherman, Mankato.
Meyer, Fred Sophus, Minneapolis.
Miller, Daniel Ralph, Duluth.

Moorhouse, Franklin Elmer, Minneapolis.
Oberg, Alfred Tion, St. Paul.
Palmer, Walter Norman, Lisbon, N. D.
Peterson, Plymouth Oscar, Minneapolis.
Russell, Aubrey Herbert, Anoka.
Sandy, Benjamin Arthur, Minneapolis.
Schacht, John, Minneapolis.
Sequist, William Peter, Mankato.
Smith, George Dwight, Minneapolis.
Smith, Julius Waldo, Austin.
Tift, J. Floyd, Hutchinson.
Trondson, Alexander Samuel,
Black River Falls, Wis.
Tuck, Lewis Edward, Minneapolis.
Turner, Edward Warden, Minneapolis.
Vanstrum, Albin R., Minneapolis.
Wanous, Edwin Frank, Glencoe.

SECOND YEAR CLASS—35.

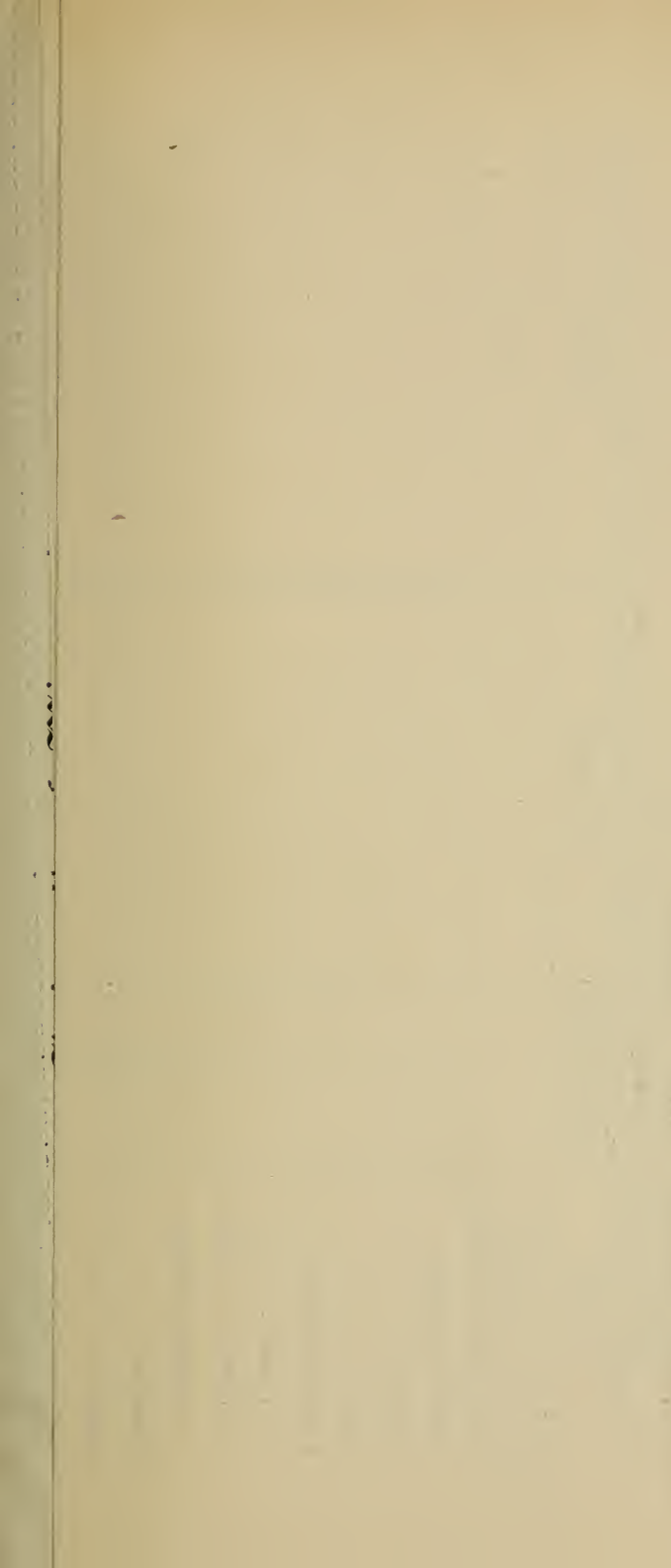
Alstrom, Joseph Theodore, St. Peter.	Hull, Isaac Stephenson, St. Paul.
Amo, Francis Philip, Alma Center, Wis.	Kuncke, Gustavus Adolphus, Henderson.
Bosel, Albert Christian, Henderson.	Lasby, William Frederick, Northfield.
Burns, Jay Hugh, Stewart.	Pattison, George Jay, Herman.
Cain, James Robert, West Concord.	Peterson, Earnest Francis, Minneapolis.
Cole, Claude Lynn, Fergus Falls.	Pike, Jay Nelson, Lake City.
Conley, Samuel Lewis, Cannon Falls.	Prendergast, Frank, St. Paul.
Cook, Michael Francis, Faribault.	Smith, Clayton Mills, Minneapolis.
Crane, Emory Saxe, Minneapolis.	Sparrow, Cecil Chester, Ortonville.
Davies, Norman Llewlyn, Minneapolis.	Spring, William John, Madison.
Day, Judson Leroy, Clinton Falls.	Spurr, Stephen Howard, (M. D.) Minneapolis
Frankoviz, Frank Anton, Fergus Falls.	Trench, James Francis, Denison.
Gholz, Lewis Ralph, Roscoe.	Werring, Oscar Sidney, Sleepy Eye.
Goodspeed, Henry Irwin, New Richland.	Whitcomb, Harold Warren, Rollis.
Hagaman, Clarence Augustus, N., St. Paul.	Williams, George Davis, Willmar.
Hektner, Hans Christian, Mooreton, N. D.	Wood, Orlando Bigelow, Blue Earth.
Hourn, George Edwin, Minneapolis.	Yaeger, Frederick Spencer, Helena, Mont.
Huestis, Walter Clyde, Minneapolis.	

FIRST YEAR CLASS—29.

Bell, Charles Ulysses, Cedar Mills.	Lillehei, Axel Olai, Luverne.
Bennett, David William, St. Peter.	McNeil, Walter Hill, Alexandria.
Braafladt, Theodore Olaf, Belview.	McRae, Duncan Adrian, Sleepy Eye.
Carr, Alvin Eugene, Minneapolis.	Mihleis, Edwin William George,
Cox, Arthur Henry, Wasioja.	Ellsworth, Wis.
Cullum, Walter Cornwall, St. Paul.	Montelius, George Alfred, Sweden.
Freeburg, Jay Monroe, Charles City, Ia.	Nelson, Albert Carlos, Litchfield.
Froelich, George Henry, Winnebago City.	Rice, Arthur Nelson, Adrian.
Green, Robert O., Florence.	Schacht, Joseph August, Minneapolis.
Grey, William Alexander, Cadott, Wis.	Steadman, Guy Benjamin, Anoka.
Hall, Neal C., Minneapolis.	Strong, William Henry, Graceville.
Hughes, Archibald C., Waseca.	Sture, Walmer Turner, Center City.
Johnson, Leonard James, Cedar Mills.	Swenson, Carl August, Ubet P. O., Wis.
Kendall, Ernest Clayton, Waseca.	Waist, Charles Edgar, Minneapolis.
Leffek, William Joseph, Ellendale, N. D.	Washburn, Rueben Jesse, Monticello.

SPECIAL STUDENTS—7.

Amundson, C. La Due, St. Peter.	Lafans, Walter S., Minneapolis.
Bathrick, Chester Aubrey, Rushford.	Peregrine, Harry G., Winona,
Fletcher, Freeman F., Red Lake Falls.	Smith, G. T., Paris, Ky.
Foster, Albert R., Winona.	



COLLEGE OF DENTISTRY.

Dated

Date of Birth Birthplace

Date of Birth **Birthplace**

Present Address.....

25 (The school officer certifying to the credits below, will please draw a line through the branches not taken in the school named.)

.....Principal,

..... *Present Residence.*

- (1) Students wishing to matriculate in this school, must present credentials signed by a City, County or State Superintendent of Schools, a Principal of an accredited High School or Academy, or the State High School Board.
- (2) A separate blank must be filled out for each school attended.
- (3) All writing upon this certificate must be done with ink.

ALSO FILL OUT WITH CARE THE FOLLOWING.

Name of parent or guardian.....

Post-office address of parent or guardian.....

How long since you attended school?.....

What occupation have you been engaged in since then?.....

Have you had experience in mechanical pursuits, if so what?.....

Have you a natural or acquired taste for mechanics?.....

Is your eyesight good?..... Is your general health good?.....

Give for reference, name, post office address of your family physician, pastor, or some well known citizen of your town or city.



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THE UNIVERSITY OF MINNESOTA

BULLETIN

VOL. VII

JUNE 10, 1904

No. 11

TABLE OF CONTENTS

College of Dentistry.

	Page
The University	1-2
Board of Regents	3
Executive Officers	4
Calendar 1904-1905	6
College Calendar	7
Faculty	9
Announcement	10
Course of Instruction	11-17
General Information	18-22
Fees and Expenses	22, 23
Students	24-27

The University Bulletins are issued every six weeks during the University year, at least six numbers every calendar year. Entered at the Postoffice in Minneapolis as second-class mail matter.

MINNEAPOLIS, MINN.

The University Bulletins are published by authority of the Board of Regents, six times a year,—every six weeks during the University year. Bulletins will be sent gratuitously, postage paid, to all persons who apply for them. In calling for bulletins, please state department of the University concerning which you desire information. The full catalogue will be sent only upon receipt of ten cents to pay postage. Address,

THE REGISTRAR,

The University of Minnesota,
Minneapolis, Minn.

The University

THE UNIVERSITY OF MINNESOTA comprises the following named colleges, schools and departments:

THE GRADUATE DEPARTMENT

THE COLLEGE OF SCIENCE, LITERATURE AND THE ARTS

SPECIAL ANNOUNCEMENT

In consequence of action taken by the National Association of Dental Faculties, at a special meeting held in St. Louis, July 18th, 1904, the College of Dentistry, University of Minnesota, will resume the three-year course with the session opening Tuesday, August 30th, 1904.

The curriculum will be readjusted, so that the first year students of 1903-1904 may graduate in two more years, upon completion of the work.

years is elective within certain limitations as to the range of subjects from which the electives are to be chosen. The work of the last two years is entirely elective. The course is so elastic that it permits the student to make the general scope of the course, classical, scientific or literary, to suit the individual purpose.

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY, leading to the degrees analytical chemist or chemical technologist offers two courses of study of four years each in analytical and applied chemistry.

A Summer School for Teachers. A six-weeks' course of instruction is offered, in various University subjects, for those whose school duties prevent them from taking the regular University courses

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THE GRADUATE DEPARTMENT

THE COLLEGE OF SCIENCE, LITERATURE AND THE ARTS

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

THE SCHOOL OF MINES

THE DEPARTMENT OF AGRICULTURE, including—

the College of Agriculture

the School of Agriculture

the Dairy School

the Short Course for Farmers

THE COLLEGE OF LAW

THE DEPARTMENT OF MEDICINE, including—

the College of Medicine and Surgery

the College of Homeopathic Medicine and Surgery

the College of Dentistry

the College of Pharmacy

The Regents of the University have also entrusted to their charge

THE EXPERIMENT STATION, including—

the Main Station at St. Anthony Park

the Sub-Station at Crookston

the Sub-Station at Grand Rapids

THE GEOLOGICAL AND NATURAL HISTORY SURVEY

THE GRADUATE DEPARTMENT. In each of the colleges, except that of medicine, there are advanced courses of study leading to second degrees. These courses are open to graduates of any reputable college upon presentation of diploma.

In the COLLEGE OF SCIENCE, LITERATURE AND THE ARTS, there is a four-years course of study leading to the degree, bachelor of arts. The work of the first two years is elective within certain limitations as to the range of subjects from which the electives are to be chosen. The work of the last two years is entirely elective. The course is so elastic that it permits the student to make the general scope of the course, classical, scientific or literary, to suit the individual purpose.

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY, leading to the degrees analytical chemist or chemical technologist offers two courses of study of four years each in analytical and applied chemistry.

A *Summer School for Teachers*. A six-weeks' course of instruction is offered, in various University subjects, for those whose school duties prevent them from taking the regular University courses

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS offers courses of study, of four years each, in civil, mechanical, electrical and municipal engineering leading to the degrees of civil, mechanical, electrical and municipal engineer. This college offers a four-years course of study in science and technology leading to the degree of bachelor of science, with an additional year leading to the engineer's degree in any one of the various lines offered in the college. This college also offers graduate work leading to the degree master of science.

THE SCHOOL OF MINES offers a four-years course of study in mining and metallurgy upon completion of which the degrees, engineer of mines and metallurgical engineer, are conferred.

THE COLLEGE OF AGRICULTURE offers a four-years course in agriculture. The degree of bachelor of agriculture is conferred on completion of the course. Students in this college may specialize along the line of forestry or home economics and secure the degree bachelor of agriculture (in forestry or in home economics).

THE SCHOOL OF AGRICULTURE offers a three-years course of study and is a training school for practical farm life and in domestic economy. The college of agriculture is open to graduates of this school who have completed the fourth year of work required for admission to the college.

The Dairy School offers practical instruction in dairying to those who are actually engaged in the manufacture of butter and cheese.

The Short Course for Farmers is designed to be of the greatest help possible to those actually engaged in farming.

THE COLLEGE OF LAW offers a three-years course of instruction leading to the degree of bachelor of laws. There is an evening class provided in this college. Graduate work leading to the degrees, master of laws, and doctor of civil law, is offered.

THE COLLEGE OF MEDICINE AND SURGERY and THE COLLEGE OF HOMEOPATHIC MEDICINE AND SURGERY offer four-year courses of study of nine months each. Upon completion of either of the prescribed courses the degree, doctor of medicine is conferred.

In the colleges of science, literature and the arts, of medicine and surgery, and homeopathic medicine and surgery, there has been established a combined course of six years leading to the degrees of bachelor of science and doctor of medicine.

THE COLLEGE OF DENTISTRY offers a four-years course of study of nine months each. Upon completion of the prescribed course the degree of doctor of dental surgery is conferred.

THE COLLEGE OF PHARMACY offers a two- or three-years course of study leading to the degree of pharmaceutical chemist. This college also offers graduate work leading to the degrees, master of pharmacy and doctor of pharmacy.

SPECIAL COURSES. In each of the colleges, students of an advanced age and adequate preparation are permitted to pursue, under the direction of the faculty, one or two distinct lines of study.

The University offers no correspondence courses.

The Board of Regents

The HON. GREENLEAF CLARK, M. A., ST. PAUL, - 1910
President of the Board

CYRUS NORTHROP, LL. D., MINNEAPOLIS, - - - *Ex-Officio*
The President of the University

The HON. SAMUEL R. VAN SANT, WINONA, - - *Ex-Officio*
The Governor of the State

The HON. JOHN W. OLSEN, ALBERT LEA, - - - *Ex-Officio*
The State Superintendent of Public Instruction

The HON. STEPHEN MAHONEY, B. A., MINNEAPOLIS, - 1907
Secretary of the Board

The HON. O. C. STRICKLER, M. D., NEW ULM, - - - 1907

The HON. JAMES T. WYMAN, MINNEAPOLIS, - - - - 1907

The HON. ELMER E. ADAMS, B. A., FERGUS FALLS, - 1909

The HON. THOMAS WILSON, ST. PAUL, - - - - - 1909

The HON. WILLIAM M. LIGGETT, BENSON, - - - - 1909

The HON. A. E. RICE, WILLMAR, - - - - - 1909

The HON. EUGENE W. RANDALL, MORRIS, - - - - 1910

Executive Officers

THE UNIVERSITY.

CYRUS NORTHROP, LL. D., *President*

E. BIRD JOHNSON, B. S., *Registrar*

GEORGE H. HAYES, *Accountant and Purchasing Agent*

THE COLLEGES.

JOHN F. DOWNEY, M. A., C. E., *Dean of the College of Science,
Literature and the Arts*

FREDERICK S. JONES, M. A., *Dean of the College of Engineering
and the Mechanic Arts*

WILLIAM R. APPLEBY, M. A., *Dean of the School of Mines*

WILLIAM M. LIGGETT, *Dean and Director of Department of
Agriculture*

WILLIAM S. PATTEE, LL. D., *Dean of the College of Law*

PARKS RITCHIE, M. D., *Dean of the College of Medicine and
Surgery*

EUGENE L. MANN, M. A., M. D., *Dean of the College of Homeo-
pathic Medicine and Surgery*

WILLIAM P. DICKINSON, D. D. S., *Dean of the College of Dentistry*

FREDERICK J. WULLING, PH. G., *Dean of the College of Pharmacy*

LIBRARIES AND MUSEUMS.

WILLIAM WATTS FOLWELL, LL. D., *Librarian*

LETTIE M. CRAFTS, B. L., *Assistant Librarian*

INA FIRKINS, B. L., *Library Assistant*

ANNA L. GUTHRIE, B. A., *Library Assistant*

MARY S. MCINTYRE, B. S., *Librarian of School of Agriculture*

THOMAS G. LEE, M. D., *Librarian of Department of Medicine*

HUGH E. WILLIS, LL. M., *Librarian of the College of Law*

CHRISTOPHER W. HALL, M. A., *Curator Geological Museum*

HENRY F. NACHTRIEB, B. A., *Curator of the Zoological Museum*

ALLEN W. GUILD, *Superintendent of Buildings*

EDWIN A. CÜZNER, *Superintendent of Grounds*



MEDICAL HALL.

CALENDAR FOR 1904-1905

1904

1905

JULY

S.	M.	T.	W.	T.	F.	S.
..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
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AUGUST

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JANUARY

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College Calendar

FIRST SEMESTER.

1904.

AUGUST	30-31.	Registration and assignment of seats.
SEPTEMBER	1-2.	Examinations for conditions and advanced standing, 9 a. m. and 2 p. m.
	5.	Examination and Registration completed.
	5-6.	Classification of students.
NOVEMBER	5.	Half semester ends.
	24	Thanksgiving Day.
DECEMBER	17	Holiday vacation begins.

1905.

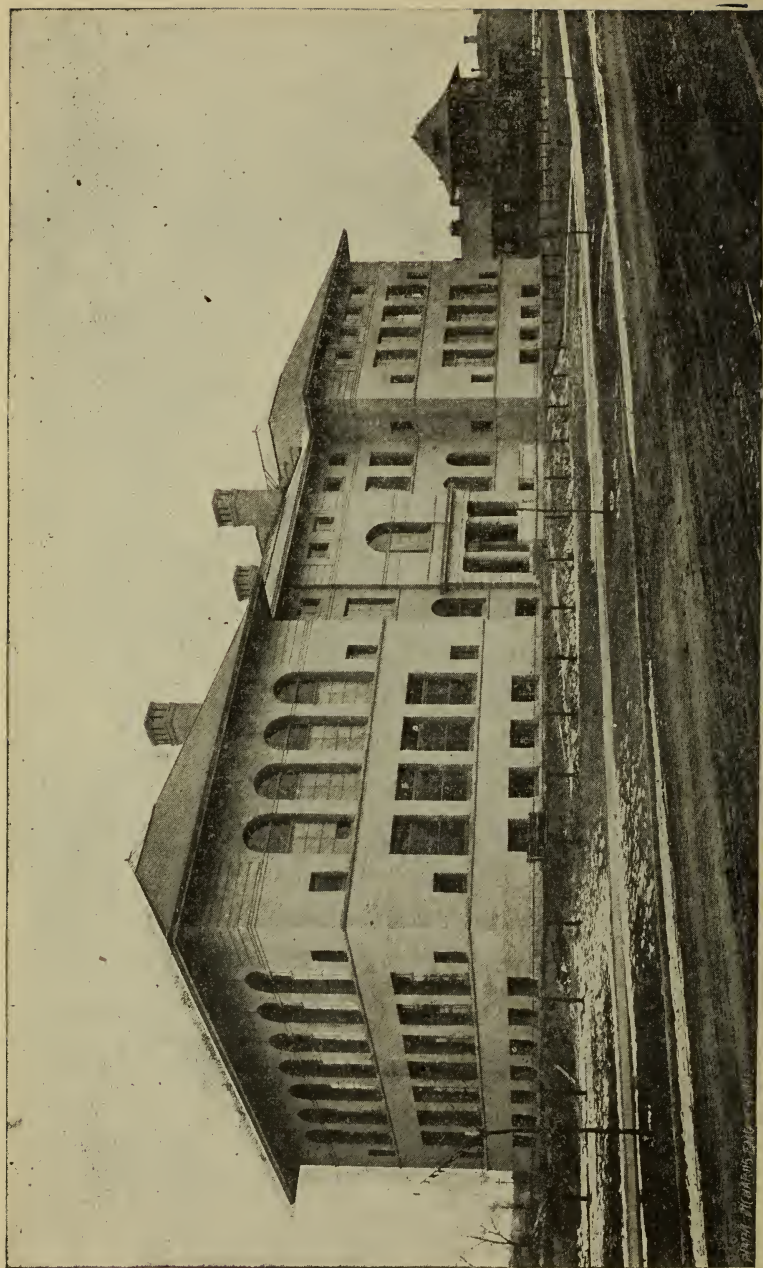
JANUARY	3.	Work resumed.
	16-21	Mid-Year examinations, ending first semester.

SECOND SEMESTER.

JANUARY	24.	Second semester begins.
FEBRUARY	12.	Lincoln's Birthday—holiday
	22.	Washington's Birthday—holiday.
MARCH	25.	Half semester ends.
MAY	22.	Annual meeting of the faculty to pass upon candidates for graduation.
	22-26.	Finale examinations, primary studies, ending second semester.

COMMENCEMENT WEEK.

SUNDAY	May 28	Baccalaureate Service.
MONDAY	May 29	Senior Class Exercises.
WEDNESDAY	May 31	Alumni Day.
THURSDAY	June 1	Commencement Day—The Thirty-third Annual Commencement.
FRIDAY	June 2	Summer Vacation Begins.



LABORATORY OF MEDICAL SCIENCES.

The College of Dentistry

FACULTY.

CYRUS NORTHROP, LL. D., *President.*

WILLIAM P. DICKINSON, D. D. S., Andrus Building. *Dean and Professor of Materia Medica.*

THOMAS B. HARTZELL, M. D., D. M. D., Andrus Building. *Professor of Pathology, Therapeutics and Oral Surgery.*

OSCAR A. WEISS, D. M. D., 506 Masonic Temple. *Professor of Prosthetic Dentistry and Orthodontia.*

ALFRED OWRE, D. M. D., M. D., C. M. *Professor of Operative Dentistry and Metallurgy.*

E. FRANKLYN HERTZ, D. M. D., Andrus Building. *Professor of Dental Anatomy and Prosthetic Technics.*

JAMES O. WELLS, A. M., D. M. D., Masonic Temple. *Professor of Crown and Bridge-Work and Porcelain Art.*

CHARLES A. ERDMANN, M. D., *Professor of Anatomy.*

RICHARD O. BEARD, M. D. *Professor of Physiology.*

THOMAS G. LEE, A. M., M. D., *Professor of Histology and Embryology.*

WINFIELD S. NICKERSON, Sc. D., *Assistant Professor of Histology.*

H. C. CAREL, B. S., *Assistant Professor of Chemistry.*

IRA HARRIS DERBY, B. S. *Instructor in Chemistry.*

FRANK F. WESBROOK, M. A., M. D., C. M., *Professor of Bacteriology and Pathology.*

S. M. WHITE, B. S., M. D., *Assistant Professor of Bacteriology and Pathology.*

FRANK R. WRIGHT, D. D. S., M. D., *Lecturer on Anaesthesia and Chief of Anaesthesia Clinic.*

MARY V. HARTZELL, D. M. D., Andrus Building. *Instructor in Comparative Dental Anatomy.*

H. M. REID, D. D. S., 423 Medical Block. *Instructor in Prosthetic Dentistry.*

JAMES M. WALLS, D. M. D., St. Paul. *Instructor in Operative Technics, and Demonstrator of Operative Dentistry.*

MARGARET L. NICKERSON, M. A. *Instructor in Histology.*

ANDREW J. WEISS. *Instructor in Technics.*

H. K. READ, M. D. *Demonstrator of Anatomy.*

M. RUSSELL WILCOX, M. D. *Demonstrator in Physiology.*

E. R. HARE, M. D., *Proscctor of Anatomy.*

FRANK W. SPRINGER, E. E. *Lecturer on Electricity and Its Uses in Dentistry.*

H. V. MERCER, LL. M., *Lecturer on Jurisprudence.*

Announcement

The College of Dentistry of the University of Minnesota offers a progressive course of study which covers four terms in four separate calendar years, beginning early in September and closing the last week in May following. Students who successfully pursue this course are given the degree D. D. S. (Doctor of Dental Surgery), which entitles them to come before any state board of dental examiners for a license to practice dentistry in that state.

The central idea upon which this institution was founded is that dentistry is a branch of the healing art, and that the practitioner should possess a medical education, hence the curriculum is arranged to include the fundamental principles that underlie the practice of medicine. In this connection special attention is called to the fact that while a thorough course is required, practical work is not neglected. The technical courses are very complete and the clinical facilities are unsurpassed.

Another special feature of this institution is that in laboratory work and infirmary practice, students at all times operate under competent instructors, the professors themselves serving as demonstrators, and every stage of each operation receives due criticism and marking.

The College of Dentistry of the University of Minnesota is a member of the National Association of Dental Faculties, and its diplomas are recognized by the Dental Examining Boards of every state.

Course of Instruction

With the session of 1903-1904, the four-year course was inaugurated in accordance with the vote in 1901 of the colleges composing the National Association of Dental Faculties; the publication of which fact has been made in the college bulletins since that time.

The following outline will show the character of work, and in a general way the amount to be done, under the new arrangement.

The crowding of studies, heretofore, in some years, will be obviated by a rearrangement and amplification, which experience has demonstrated, with addition of others that have been impossible to find time for, together with increased opportunities for infirmary work in all branches, and for the pursuit of special work in what are usually considered as post-graduate studies.

The schedule of the studies and work of each year will be in print at the beginning of the session.

ANATOMY.

Osteology.

Lectures and recitations upon the human skeleton and supplementary work on the osteology of domestic mammals; three hours each week, for 10 weeks of first semester. Practical study of the skeleton, followed by recitations from the specimen, taken by the class, in sections; 2 hours each section, for 10 weeks, first semester. Required of all first year students.

Syndesmology.

Lectures, recitations and laboratory demonstrations. Three hours each week, for 4 weeks, first semester.

Myology and angiology.

Lectures and recitations covering the entire muscular and arterial systems of the human body, with a supplementary study of comparative myology; 3 hours each week, 16 weeks. Laboratory work consists in identifying the muscles of the human body on dissected preparations and showing their actions. Class, in sections, 4 hours each week for 5 weeks.

Text-books required. Quain's Anatomy, tenth addition, Vol. 11, parts 1 and 11, or Morris' Anatomy.

Splanchnology.

Descriptive and topographical anatomy of the thoracic viscera, the alimentary and urino-genital organs. Lectures and recitations, 3 hours each week, for 10 weeks.

Descriptive and surgical anatomy.

Head, neck, trunk and extremities. Lectures and recitations, 3 hours each week for 12 weeks.

The nervous system.

Cerebro spinal axis and its membranes; the cranial and spinal nerves; the sympathetic nervous system, and the special-sense organs. Lectures and recitations, 3 hours each week for 8 weeks.

Text-books required. Morris' Anatomy. Edinger's Anatomy of Brain and Cord.

Dissecting. The work extends over a period of eight weeks, requiring 15 hours each week. The dissection of the entire human body is required. The method of work follows that laid down in Holden's Manual of Dissections.

DENTAL ANATOMY.

The subject is taught by a thorough laboratory course, in which the student studies the teeth by dissection, modeling, carvings and drawings. In the study of dental anatomy, human and comparative, the definition, terminology, notation, form and arrangement of the teeth will be fully considered; also macroscopic and microscopic characteristics of sections, including the study of the relation of enamel to dentine and of the pulp canal.

In the study of structural anatomy, teeth will be selected and mounted upon wooden blocks. They will be filed down until the pulp chamber and canals are exposed, and drawings from actual measurements of the different aspects will then be made and carefully studied. Opportunity for the study of microscopic sections and lantern slides will also be afforded. The didactic instruction will be illustrated by "chalk talks," lantern slides, lectures, heroic models and skulls.

The standing of the student will be determined by marks given on the cutting of sections, models, drawings and recitations. Lectures and recitations, covering the influence of form and arrangement of the teeth upon caries will also be given.

Text-book required. Blacks' Dental Anatomy.

Collateral reading—American Text-Book. Comparative Dental Anatomy, (Thompson). Dental Anatomy, Human and Comparative (Tomes').

COMPARATIVE DENTAL ANATOMY.

The instruction in this subject embraces a comparative study of animal life, giving special attention to number, form and arrangement of teeth, and their adaptation to food habits, ranging from the horny teeth of invertebrates, to the complex tooth-forms of the most highly specialized animals of the present time. The lectures will be illustrated with the stereopticon, casts, models and skulls.

Text-book. Thompson. *Collateral reading,* Tomes.

PHYSIOLOGY.

The subject is taught by recitations and lectures illustrated by practical demonstrations. These embrace the discussion, and as far as possible, the observation of physiological ingredients of the animal body; of the physiology of cell life or the fundamental properties of the cell; the nutritive media, blood, lymph and chyle; of the elementary functions of the nervous system; of the muscular tissues; and the epithelial tissues; of the vascular mechanism; of the alimentary canal; of the organs of secretion, excretion and respiration.

Text-book required. Foster's Physiology.

HISTOLOGY AND EMBRYOLOGY.

This course will consist of lectures, recitations, laboratory work and demonstrations and will include a study of the structure and properties of protoplasm; the cell, its structure and properties, cell division, reproduction, ovum, spermatozoon and formation of blastoderm. A study of the structure and life history of certain type forms of unicellular animals and plants as amoeba, paramoecium yeast, spirogyra, etc., simple metazoa, as hydra, etc.; consideration of the structure of vertebrates; the tissues, as epithelium, connective tissue, cartilage, bone, etc., muscle, nerve, blood and lymph; vascular and lymphatic system. The teeth, enamel, dentine, cementum, pulp, etc. A general outline of the development of the embryo; the formation of the head; development of the jaws, teeth, oral cavity, glands, etc.

N. B.—Recitations, four hours per week; laboratory, six hours per week.

Text-book required. Stohrs' Histology.

CHEMISTRY.

(a) Lectures on the chemistry of the elements.

(b) Laboratory work in general inorganic chemistry of non-metallic and metallic elements.

(c) Lectures on qualitative analysis with special attention to the examination of alloys.

(d) Laboratory work corresponding to course (c) and including the qualitative determination of bases and acids. In this course several alloys are analyzed by each student.

(e) Recitations are carried on throughout the year to test the individual knowledge of each student.

Text-book required. Inorganic Chemistry Syllabus and Laboratory Notes on Qualitative Analysis, prepared by the department.

(a) Lectures on the analysis of urine.

(b) Laboratory work in qualitative and quantitative examination of normal and abnormal urine.

(c) Recitations are carried on throughout the year to test the individual knowledge of each student.

(d) Optional courses are offered in quantitative analysis, water analysis, saliva, etc.

Text-books required. Inorganic Chemistry Syllabus, and Chemical Urinalysis, prepared by the department.

MATERIA MEDICA.

This course will include the terminology and general consideration of the sources, classification characteristics and physiologic action of drugs and therapeutic measures employed in dentistry.

Special study will be devoted to the methods of use, administration and physiological action of those of greatest value to the dental practitioner. Germicides, antiseptics and the rest, being fully discussed.

Medicines used for systemic treatment in cases of dental and oral derangements, poisons and their antidotes, dosage and rules for the same, the making of percentage preparations, anesthetic agents, both local and general, dentifrices and mouth-washes, and the writing of prescriptions will receive due attention according to the importance of each.

A feature of this course will be the examination of new remedies, and new methods suggested for the treatment of pathologic conditions of the mouth and teeth.

BACTERIOLOGY AND PATHOLOGY.

Bacteriology. Lectures, recitations and laboratory work, a short general survey of the problems brought to light by bacteriology, and general methods and technique involved, will be followed by special study of certain micro-organisms, such as pyogenic cocci, B. tuberculosis, B. diphtheriae, etc. These studies will be pursued by means of actual cultivation on the various media, the making and examination of microscopic preparation of pure culture, and both cultivation from and microscopic examinations of infected tissues and fluids of the body, by the students themselves.

Text-Book. Muir & Ritchie.

Pathology. Lectures, recitations and laboratory work. Special study of inflammations and histological changes occurring in the tissues and fluids, constitute the major portion of this course. Some attention is given to the degenerations and the subject of tumors with special reference to the face and oral cavity. Students prepare and examine many of the specimens and receive loan slides of the rarer types, or those difficult of preparation.

PATHOLOGY AND THERAPEUTICS.

The instruction in this branch will begin with a consideration of the terminology belonging to the subject, followed by the presentation of the lesions of inflammation, local and general, and the degenerate change in the tissues.

The general character of tumors, practical consideration of pathological dentition, interstitial gingivitis, (pyorrhoea alveolaris) pulpitis, pulp nodules, secondary dentine, pericementitis, alveolar abscess, caries of jaw and necrosis, dependent on a diseased condition of the teeth, the various inflammations of the oral cavity, including syphilis and tuberculosis, will all receive due attention.

Text-book required. Burchard.

Therapeutics. This course is given by lectures and recitations, and clinically. The student being instructed in the special therapeutics of dental and oral diseases; systematic treatment in cases requiring it, receives due consideration. New remedies that give promise of value are fully studied and put to practical test in the infirmary, under direct supervision. Antiseptic and disinfectant methods, as well as dental hygiene, also receive due attention.

ORAL SURGERY.

The subject of oral surgery will be taught clinically and didactically. The large amount of clinical material presented at the infirmary, furnishes ample opportunity for practical demonstration. Students are required to take charge of cases and carry them through under the advice of the instructor in charge. The didactic lectures will include a full consideration of all the surgical lesions of the oral cavity and associate parts, including oral tumors and the reflex neuroses connected with the fifth pair of nerves; fractures of the maxillae; cleft palate and hare-lip; caries and necrosis of the jaws from constitutional causes; adenoid growths and nasal polypi in their relation to oral surgery; suppuration of the antrum; ulitis; epulis; fungoid pulp; ranula; exostosed teeth; ankylosis and dislocation, implantations, obturators, interdental and other forms of dental splints.

Arrangements have been made with several clinicians connected with the different hospitals of the city to give several clinics. An abundance of material representing all the different forms of diseased conditions of the mouth and associate parts is to be found in the infirmary service, which will be assigned to students for treatment under direction of the professor of oral surgery.

Clinical lectures on the cases presented will be given from time to time. These cases include alveolo-dental abscesses; caries and necrosis of the maxillary bones; diseased conditions of the antrum; interstitial gingivitis; dislocations and ankylosis; facial neuralgias; tumors of the mouth and associate parts, hare-lip; cleft-palate; implantation cases and fractures.

Text-book required. Marshall's Oral Surgery.

PHYSICAL DIAGNOSIS AND ANESTHESIA.

The subject of physical diagnosis will be taught didactically and practically, and will have direct bearing upon the subject of anaesthesia and will be as complete as its importance demands.

A course in urinalysis will be given in connection with this course.

The technics of anaesthetics, both general and local, receive full consideration. All anaesthetics are administered in the clinic, and full instruction concerning their use is given. The members of the senior class are required, under direction, to administer them and extract teeth under these agents.

Text-books required. Tyson, Physical Diagnosis, and Turnbull's Manual of Anaesthetics.

OPERATIVE DENTISTRY.

Didactic. Lectures and recitations illustrated by lantern slides, charts, heroic models and physical apparatus will be given on cavity classification and nomenclature, instrument nomenclature and instrumentation, removal of deposits, rubber-dam and exclusion of moisture; cavity preparation, the enamel in its relation to cavity margins; hypersensitive dentine and pulp treatment, conservative and radical; including discoloration, its cause and treatment; canals, their cleansing and filling; matrices; separating teeth and correcting interproximate space; preparation and insertion of filling materials, including inlays; finishing fillings; clinical operations in their relation to vital tissue, including a review of the technic of conservative operations; the conduct of a practice.

Both junior and senior classes attend these lectures and stand quiz. The questions to each class vary according to their work. An examination will be held at the close of each subject.

Technical. The course of technics includes the formation of typical cavities in plaster models, vulcanite and ivory teeth; protecting nearly exposed pulps, and capping exposed pulps; gaining access to canals; cleansing and filling canals with various materials, subsequently examining them to note results; application and retention of the rubber-dam; preparing and inserting the various filling materials, gutta percha, cements, amalgams, tin and gold.

Clinical.

Before beginning work upon patients, students are given an "infirmary drill," in which they are taught to meet patients, adjust the chair, make examinations, remove deposits and cleanse the teeth, and apply the rubber-dam. In the infirmary, students are under the immediate supervision of the instructors of this branch, who teach them how to diagnose, treat, and prognose cases, beginning with those requiring the simplest service and progressing as their skill increases. This intimate association of the technical and clinical enhances the value of the former and facilitates progress in the latter. Each operation is first presented to the student by a demonstration given by the instructor.

Text-books required. American Text-Book Operative Dentistry. Reference, Johnson's Principles and Practice of Filling Teeth.

OPERATIVE DENTISTRY—ADVANCED COURSE.

Didactic. The lectures on operative dentistry are delivered to both second and third year classes. All will be required to attend and stand "quiz." The questions to the senior class will bear more upon the application of principles in practice. An examination will be held at the conclusion of each subject.

Clinical. Many clinics demonstrating advanced operations and peculiar methods are given in this year. The student has ample opportunity to put these methods into practice; he will also give special attention to the different forms of pathological lesions that pertain to daily office practice, and will carry cases to completion, including the restoration of the teeth to usefulness by filling, crowning or bridging, as the case may require. All operations will be marked and record so made, together with a written examination on the didactic work, will form the final test in this branch.

Text-book required. Kirk's American Text-Book of Operative Dentistry.

Reference. Johnson's Principles and Practice of Filling Teeth.

PROSTHETIC DENTISTRY.

The work of the first year is almost entirely technical; only such lectures and demonstrations being given as to enable the student to carry on his work in the laboratory intelligently. The work comprises a consideration of impression materials, taking impressions, and making casts and models, making upper and lower retaining plates for a fellow student's mouth; and after which the upper is broken and repaired; making partial upper plate with rubber base, comprising the making of trial plate, taking bite, mounting case in articulator, grinding and arranging teeth for proper articulation, flasking, packing, vulcanizing and finishing. Making full upper and lower sets of teeth upon rubber base, using plain teeth and arranging same in accordance with the Bonwill-law of articulation; making full upper and lower swaged metal plates, comprising the making of models, molding in sand, casting dies and counter-dies; swaging plate to fit model, soldering rim and grinding and polishing metal. Making lower cast-metal plate, comprising the making of models and moulds, casting and polishing.

Didactic. Lectures and recitations of the second year will cover the preparation of the mouth for artificial dentures, choice of impression materials, the various base-plates, their composition and preparation. Porcelain teeth, their composition, form and color as related to temperamental types, and their forms as adapted to the various base-plates.

The various methods of retention, and the indications and uses of the different forms of partial plates is fully considered.

Technical. Making upper swaged plate of german silver, mounting plain teeth thereon to articulate with model of lower natural teeth. Making upper combination swaged metal and rubber plate, mounting gum-section teeth thereon to articulate with lower cast metal plate. Making partial swaged metal plate reinforcement and clasps. Making partial upper swage metal plate with teeth attached by soldering. Making lower cast metal plate, casting metal around lingual side of teeth and forming gum upon labial and buccal sides with pink rubber. Making lower swaged aluminum plate with turned rim.

Clinical. The student enters the infirmary upon completion of the technic course, and puts into practice the principles there acquired.

Text-book required. Essig's American Text-Book of Prosthetic Dentistry.

PROSTHETIC DENTISTRY—ADVANCED COURSE.

Didactic. Lectures and recitations upon the use, construction and adjustment of obturators and artificial vela in the treatment of cleft-palate cases. Continuous gum-work, construction and uses, will be fully illustrated and demonstrated.

Clinical. An excellent clinic is provided, enabling each student to make not less than twelve dentures, covering the various conditions usually met with in general practice. Cases of unusual occurrence appearing in the clinic will be utilized as special clinics for the advantage of the entire class.

Text-Book. Essig's American Text-Book of Prosthetic Dentistry.

CROWN AND BRIDGE WORK.

Didactic. Lectures and recitations will cover the subject of crown and bridge-work.

All forms of crowns and bridges will be taken up in order, and considered from theoretical and practical view-points.

Technical. The technics are arranged so that each student is required to con-

The completed technics illustrate the following types of crowns and dummies: with root preparation for the former, and to assemble the same in bridges.

The completed technics illustrate the following types of crowns and dummies: the shell crown, the shell crown with porcelain face; the Richmond crown; the same with removable porcelain face; the Logan crown, with and without band; partial crowns for lingual attachment; porcelain crowns for incisors and cuspids, and the same for bicuspid and molars. Porcelain-faced dummies for bicuspid and molars, and the same with removable facings. Solid metal dummies for bicuspid and molars, and porcelain faced saddle dummies for incisors and cuspids, and the same with removable facings.

CROWN AND BRIDGE WORK—ADVANCED COURSE.

Technical. The construction of porcelain crowns and bridges, and crowns with attachments for the rigid retention of the same.

Clinical. The student in this year will perform practical operations in the mouth, covering all forms of crown and bridge-work.

Text-Book required. Essig's American Text-Book of Prosthetic Dentistry.

PORCELAIN INLAYS.

Didactic. Lectures and recitations will be given on the indication for inlays, the character and manipulation of the porcelain bodies, cavity preparation, forming the matrix, baking and setting the inlay.

Technical. Each student will be required to make at least one inlay in an extracted tooth.

ORTHODONTIA.

The work in the first year of a two-years' course is technical, with such lectures and demonstrations as will enable the student to perform the laboratory work. In addition to this, the student will be required to attend the lectures given the third year class, so that upon entering the senior year to carry on a clinical case, he will have a general idea of the practice of orthodontia.

The technic course is thorough and complete in its scope, it being deemed necessary that the student should have the requisite skill to make regulating appliances, in order to properly place them in the mouth; in other words, it requires no more skill to make appliances than should be possessed to correctly place and operate them.

Furthermore, no system of "ready-made" appliances is considered wholly adequate or best adapted for the correction of all irregularities, thus the necessity for making them.

The technic work in this year includes a consideration of material for regulating appliances. German silver, its properties, annealing and tempering; drawing wire, making tubing and band material; constructing band with screw; jackscrews of different forms, rotation and expansion appliances, retractors and retainers.

The properties of steels, forging, hardening, tempering and polishing, the making of excavators and chisels, band drivers, band removers and wrenches or keys. Making taps for threading nuts, etc. Each operation is performed by the student after a demonstration by the teacher.

Text-Book required. Guilford's Orthodontia.

ORTHODONTIA—ADVANCED COURSE.

Didactic. Lectures and recitations upon the classification of irregularities of the teeth; etiology, local and constitutional; evils arising therefrom; advisability of correction; methods of treatment, including a consideration of the positive or intermittent and constant forces.

The principles of application of force and anchorage are given special consideration, rather than appliances.

Retention and methods of accomplishing the same are fully considered.

Clinical. In this year an ample clinic affords opportunity for each student to treat cases of irregularity.

The correction of at least one case by each student is required. The student is also required to observe and inspect the cases of his classmates, thus enabling him to see a large variety of cases with their treatment.

The student will use such of the technic appliances as are adapted to the case in hand and make such new ones from the material left over from the previous year as the case may require.

Text-Book. Guilford's Orthodontia.

METALLURGY.

Didactic. This subject will be treated in the following order: Metallurgical terms, processes and the principles upon which they are based; the various metals and their ores; process of extraction and refining; their properties and application in the arts, especially in dentistry; alloys, general, and those used in dental amalgams. Lectures and recitations once a week throughout the year, written quizzes monthly.

Technical. Refining of gold and silver, producing pure metals from scraps and fillings. Making alloys for plate, crown and bridge-work, solders and alloys for dental amalgams.

Special attention is given to the melting, casting, cutting, annealing and testing of dental amalgam alloys. Each student will be required to provide metal scraps for refining, and metals for amalgam alloys with which to produce by the processes named, metals and alloys, which will be retained by him for future use.

Text-book required. Hodgen's Practical Dental Metallurgy.

USES OF ELECTRICITY IN DENTISTRY.

A course of laboratory instruction will be given upon the different forms of batteries, dynamos and motors in use in dental practice. Their construction, use, care and operation. Electricity as used in surgery and for therapeutic purposes, including application of the x rays, will be made clear by laboratory demonstrations and practical application.

DENTAL JURISPRUDENCE.

A course of lectures will be given upon the special duties, obligations and privileges of professional men, with respect to their patients, fellow practitioners and the general public. Laws relating to expert witnesses, cases of alleged malpractice, liabilities incurred from septic infection, etc., will have due consideration.

The enactments regarding the attainment of legal standing as practitioners in Minnesota and other states will also be fully explained.

STUDENTS DENTAL SOCIETY.

At the beginning of the senior year a society is organized, which is under the direct supervision of the faculty, and is made a part of the course of instruction. Every senior student is required to prepare an original paper upon some dental or allied topic, to be read before and discussed in open meeting. The meetings will commence the first week in October.

The junior students will be required to attend the meetings of the students' dental society, to familiarize themselves with the proceedings of such bodies.

General Information

THE COLLEGE YEAR.

The seventeenth annual session of this college opens Tuesday, August 30, 1904 and closes on Saturday, May 26, 1905.

The technic and laboratory courses begin Tuesday, September 6.

The college year will be divided into semesters, the first ending January 14, 1905. The succeeding week will be devoted to the mid-winter examinations. The second semester begins Monday, January 24. The lecture courses will close May 20, and the final examinations of the year begin on Monday, May 22.

Practical work for both the senior and junior classes will continue until May 26.

Commencement exercises will occur in common with the other departments of the University on Thursday, June 1st, 1905.

All statements in this announcement as to courses of study, conditions, requirements or fees, have reference to or binding force only upon the session of 1904-1905, unless otherwise definitely stated.

QUALIFICATIONS FOR MATRICULATION.

The requirements for admission to the College of Dentistry for the session of 1904-1905, and thereafter, will be graduation from an accredited four-year high-school course, or its equivalent, and a credit in manual training. Failing to have the latter, the prospective student will be required to demonstrate, by test, the possession of mechanical capability.

If the applicant has no credit in Latin, he will be required to take a course in a private class provided in the College of Medicine, and for which a fee is charged. After the present session all students will be expected to furnish the Latin credit upon matriculation.

The "equivalent" of a high-school graduation will be twelve one-year credits; a "credit" representing the ground covered in a high-school study, for a course of at least thirty-six weeks, five recitations per week.

Students wishing to matriculate in this school, must present credentials signed by a city, county or state superintendent of schools, a principal of an accredited high school or academy, or the state high school board.

A regulation blank, upon which to make out these certificates, will be found inside back cover of this Bulletin.

Students not having the above credentials, or an insufficient number of them, may take examinations before a committee appointed by the president, from the college of science, literature and the arts, of the University.

Examinations are held only in the English language.

ENROLLMENT.

Students will be assigned seats in order of, and at the time of their matriculation. Such matriculation and assignment of seats will be had in the office of the registrar of the University, in the library building.

Seats in the amphitheatre, laboratory benches and lockers, as well as chairs and lockers in the infirmary, are assigned to students in the order of their matriculation.

ADVANCED STANDING.

Applicants for advanced standing must present satisfactory evidence of possessing the preliminary educational qualification required of the class they desire to enter.

They must also satisfy the professors of the branches from which they wish to be exempt, that the work pursued by them in other institutions was equal in scope and amount to that passed by the class they propose to enter.

No credits are accepted unconditionally, the Faculty reserving the privilege of examining any applicant when deemed necessary.

All certificates pertaining to advanced standing must be presented to the dean who will send them to the respective professors for acceptance or report of further requirements for acceptance.

Students coming from other schools must make up their technic conditions under supervision of the instructors of this school, **at the convenience of the instructor.**

One-year credit will be allowed graduates in medicine, but the dental technic branches of the first year must be taken and completed before advanced work in these branches can be entered upon, and the courses in dental pathology, dental histology and bacteriology taken as they occur in the curriculum.

When a student, for any cause, transfers from one college to another of the National Association of Dental Faculties, his certificate of attendance and standing must be verified by the dean of the school he withdraws from. This is done by correspondence between the executive officers of the two schools.

The dates for examinations in anatomy, physiology, histology and chemistry, for students having conditions, and applicants for advanced standing in those branches, will be held on the following dates.

September 1st, 9 a. m.—Anatomy, first year.

September 1st, 2 p. m.—Histology, first year.

September 2nd, 9 a. m.—Physiology, first year.

September 2nd, 9 a. m.—Anatomy, second year.

September 2nd, 2 p. m.—Chemistry, first year.

ATTENDANCE AND DISCIPLINE.

The college hours are from 8:30 a. m. to 12:30 p. m., and from 1:30 to 5:30 p. m.

Attendance upon all lectures, and infirmary and laboratory hours as scheduled is obligatory. A complete record of each student's attendance is kept, and all absences and tardinesses are noted.

All laboratory courses must be taken in full and must invariably be entered during the first week in which they begin.

Habitual absence, continued indifference to study, or persistently poor scholarship may subject the student to temporary or permanent suspension.

The practice of dentistry by students, except under the direct superintendence of a preceptor, is prohibited by law in the state of Minnesota, and a rule of the National Association of Dental Faculties to which this college belongs, reads as follows: "Students in attendance in colleges of this association are required to obey the laws regulating the practice of dentistry in the various states, and, failing to do this, shall not be again received into any college of this association." Any student detected in violating this rule will be suspended or expelled.

The connection of any student with this college may be terminated at any time, without a return of fees, whenever such action may be advisable on the ground of immorality, or disorderly conduct, or a failure to conform to the established rules.

BREAKAGE AND LOSS.

A deposit of five dollars (\$5.00) will be required in addition to the first semester fee, to cover loss of and breakage or damage to college property. This will be returned at the end of the year, providing there is no charge against the student. This fee is to be deposited with the University accountant each year when the student matriculates.

INSTRUMENTS, BOOKS, TOOLS AND MATERIALS.

All students are required to provide themselves with instruments, books, tools and materials as prescribed by the college. These can be obtained in the city, with the usual discount to students. The first installment must be procured and approved by the instructor before seats can be assigned in the technic laboratories.

COLLEGE MUSEUM.

Members of the dental profession, and others interested, are invited to contribute pathological specimens, casts of malformations, irregularities of the teeth, models, charts, drawings, etc., which may be useful as illustrative matter in the lecture rooms.

ALUMNI ASSOCIATION.

An association of the graduates of the college has its annual meeting during commencement week.

CLINICAL FACILITIES.

The opportunities for acquiring a practical knowledge of both operative and prosthetic procedure is unsurpassed, the material presented in the infirmary clinic being more than ample for all purposes of instruction.

GRADUATION.

At the close of the fourth year, a student who has passed all examinations satisfactorily, receives the degree of Doctor of Dental Surgery (D. D. S.), upon the following conditions:

He must be twenty-one years of age.

He must have attended four full courses of instruction, the last of which must have been in this college.

He must have passed the full requirement in dissections and must have performed satisfactorily in the college all the required operations in operative and prosthetic dentistry.

Immorality, disorderly conduct, or a failure to conform to the rules of the college, will be deemed a sufficient bar to any receiving his degree.

Under no circumstances are degrees *in absentia* conferred by this college.

Students failing to graduate will be required to pay a fee for completing each branch of unfinished work.

FEES AND EXPENSES.

The annual fee, which includes all charges for matriculation, lecture and laboratory courses, and dissections is, one hundred dollars (\$100.00).

One-half of this fee will be payable when the student matriculates. The accountant's receipts for the portion will entitle the holder to take entrance examinations and to classify. The second half will be payable at the opening of the second semester. These receipts must be presented to, and countersigned by the Dean before entering upon the work of each semester.

There is no fee for diploma upon graduation.

If the applicant fails to pass the entrance examinations, his fee will be returned by the accountant.

In addition to the college fee there is a rental fee of \$2.00 for a microscope, in each semester when its use is required, provided the student is not supplied with a satisfactory instrument.

There is also a rental fee of \$1.00 for microscope in the course of bacteriology in the third year. It is an advantage for the student to possess his own microscope, and assistance in the selection of one will be given when desired.

There are no free scholarships, and no students are received for less than the regular fee.

No student will be permitted to take final examinations until after all fees and charges have been paid.

After having entered upon the course of study, fees are not returnable, and no rebate will be recommended should a student discontinue work, but the faculty may recommend the application of a part to the succeeding year.

Senior students failing to graduate, will be required to pay a fee of ten dollars (\$10.00) for each branch examined in or taken subsequent to the close of the session in which the failure occurred. A fee of \$10.00 will also be charged for the completion of each branch of unfinished laboratory or practical work.

Rooms and board convenient to the college can be obtained at prices ranging from \$3.00 to \$5.00 per week according to accommodations.

Furnished rooms without board, from \$5.00 to \$10.00, and unfurnished rooms from \$4.00 to \$7.00 per month.

A list of rooms and boarding places is kept by the secretary of the University Y. M. C. A., to whom inquiries or applications may be addressed.

From one hundred and fifty to one hundred and seventy-five dollars are necessary to defray the expenses of the first month. These include tuition, for first semester, board and room for the month, and books, instruments, tools, and materials for the year, which must be purchased before commencing work. In order to avoid embarrassment, the student should bring sufficient funds to cover these first expenses.

For further information, address Dr. W. P. Dickinson, Dean, College of Dentistry, University of Minnesota, Minneapolis.

Students

GRADUATES—CLASS 1903.

Ahlstrom, Joseph Theodore, St. Peter.	*Lafans, Walter Scott, Minneapolis.
*Amundson, C. LaDue, St. Peter.	Lasby, William Frederick, Northfield.
Bosel, Albert Christian, Henderson.	Moorhouse, Franklin Elmer, Minneapolis.
Burns, Jay Hugh, Stewart.	Pattison, George J., Herman.
Cain, James Robert, West Concord.	Peterson, Ernest Francis, Minneapolis.
*Crane, Emory Saxe, Minneapolis.	Pike, Jay Nelson, Lake City.
Cole, Claude Lynn, Fergus Falls.	Prendergast, Frank, St. Paul.
Conley, Samuel Lewis, Cannon Falls.	Smith, Clayton Mills, Minneapolis.
Cook, Michael Francis, Faribault.	*Smith, George Dwight, Minneapolis.
Davies, Norman Llewellyn, Minneapolis.	Sparrow, Cecil Chester, Ortonville.
Day, Judson Leroy, Clinton Falls.	Spring, William John, Madison.
Foster, Albert Ray, Winona.	Trench, James Francis, Denison.
Frankoviz, Frank Anton, Fergus Falls.	*Tuck, Lewis Edward, Minneapolis.
Gholz, Lewis Ralph, Roscoe.	Werring, Oscar Sidney, Sleepy Eye.
Goodspeed, Henry Erwin, New Richland.	Whitcomb, Harold Warren, Alexandria.
Hektner, Hans Christian, Mooretown, N. D.	Williams, George Davis, Willmar.
Hourn, George Edwin, Minneapolis.	Wood, Orlando Bigelow, Blue Earth.
Huestis, Walter Clyde, Minneapolis.	Yaeger, Frederick Spencer, Helena, Mont.
Kuncke, Gustavus Adolphus, Henderson.	

*Diplomas granted by the Board of Regents upon completion of work.

THIRD YEAR CLASS—26.

Bell, Charles Ulysses,	Mihleis, Edwin Wm. Geo.,
Cedar Mills.	Ellsworth, Wis.
Barney, Paul Wood, Mankato.	Montelius, George Alfred,
Bennett, David William,	Sweden.
St. Peter.	Nelson, Albert Carlos,
Braafladt, Theodore Olaf,	Litchfield.
Belview.	Reed, Albert Alonzo,
Cox, Arthur Henry,	Humboldt, Iowa.
Wasioja.	Rice, Arthur Nelson, Adrian.
Cullum, Walter Cornell,	Rider, Don DuVello,
St. Paul.	Minneapolis.
Freeburg, Jay Monroe,	Schacht, Joseph August,
Charles City, Iowa.	Minneapolis.
Green, Robert O., Florence.	Steadman, Guy Benjamin,
Grey, William Alexander,	Anoka.
Cadott, Wis.	Strong, William Henry,
Johnson, Leonard James,	Graceville.
Cedar, Mills.	Sture, Walmer Turner,
Leffek, William Joseph,	Center City.
Ellendale, N. D.	Swenson, Carl August,
Lillehei, Axel Olai, Luverne.	Ubet P. O., Wis.
McNeil, Walter Hill,	Waiste, Charles Edgar,
Alexandria.	Minneapolis.
McRae, Duncan Adrian,	
Sleepy Eye.	

SECOND YEAR CLASS—58.

†Agern, Arthur Cornelius,	Burgan Frederick, Preston,
Fergus Falls.	Minneapolis.
Baker, Henry W., Wells.	Burt, Leonard Henry, Chokio.
Bancroft, Merton Eugene,	Bush, Charles Arthur,
Delton, Wis.	Northfield.
Barnett, Harvey Dwight,	Casselman, Don, Tracy.
St. Paul.	Corson, Walter Hartley, Ada.
Barton, Harry Elijah,	Crouch, David Charles, Tracy.
Flint, Mich.	Curtin, James, Henderson.
Bennett, Charles Edward,	Deering, Joseph Wm.,
Granite Falls.	West Superior., Wis.
Bittner, Arthur Hugo,	Dittmarsen, John Elias, Irving.
St. Peter.	Doyle, Milo Hayden,
Borgendale, Edward,	Winnebago City.
Lac Qui Parle.	Foster, Charles White,
Bowe, John Francis, Waseca.	St. Paul.
Brastad, Olaf, Minneapolis.	Gillam, Clarence Gifford,
Brown, Thos. Andrew,	Windom.
Lake City.	Glimme, Knute Arthur,
Bugbee, Clyde Sereno,	Kenyon.
Minneapolis.	

†First semester.

Hamlon, Chauncy Wilfred, Jackson.	Olson, Theodore John, St. James.
Hanson, Henry Alexander, Fergus Falls.	Porter, Harold Ferdinand, Willmar.
Ihle, Edward Anthony, Eau Claire, Wis.	Putney, Charles A., Moorhead.
Ingalls, Raymond Eugene, St. Paul.	Remele, Henry William, Sleepy Eye.
Johnson, Alfred C., Winthrop.	Sheehan, Thomas Vincent, Luverne.
Kubat, William, Blooming Prairie.	‡Sheldon, Charles Henry, Groton, S. D.
LaDue, Thomas Irving, Fertile.	Shellman, Joseph Frederick, Fergus Falls.
Lukkason, Joseph, Bratsberg.	Staples, Forest Edward, Howard Lake.
Lyon, Harry David, Minneapolis.	Strang, Cassius Clinton, Duluth.
Maves, Herman Albert, St. Peter.	Sweeney, Eugene Sylvester, Garfield.
McIntyre, Ralph Emerson, River Falls, Wis.	Taylor, William Knox, Minneapolis.
Miller, Charles Warren, St. Peter.	Twidt, Oliver, Farmington.
Moskau, Gilbert, Mayville, N. D.	Vandersaal, William, Pomeroy, Pa.
Nelson, Charles, Glencoe.	Wallace, Robert, Minneapolis.
Nelson, Elo, Amor.	White, Frank Denton, Minneapolis.
Nelson, Geo. Andrew, Kasson.	Youngberg, Everett LeRoy, Cannon Falls.
Newgord, Harry Clarence, Minneapolis.	

FIRST YEAR CLASS—45.

Alrick, Owen Kinnie, Minneapolis.	Fortier, Stephen, Little Falls.
Amundson, Frederick Arthur, St. Peter.	Frederickson, Marcus, Lakefield.
Anderson, Carl Ernrid, Kennedy.	Gilder, James Keirl, Jr., Newberry, S. C.
Baker, Harry Jacob, Rose Creek.	Heddy, Ula Emil, Minneapolis.
Barringer, Paul Ernest, St. Paul.	Huntington, Walter Sandberg, Marion, Iowa.
Bjorge, Oscar, Lake Park.	Jung, William Richard, Fergus Falls.
Blix, Adolph Leonard, Bagley.	Jungclaus, Edward Henry, Glencoe.
Blondel, Louis Dale, Spencer, Iowa.	Kingsley, Royal John, Anaconda, Mont.
Boerner, Wm. Frederick Ernest Buffalo.	Korfhage, Louis William, St. Paul.
Corser, Wayne Bliss, St. Paul.	Layne, James Thomas, Rushford.

‡Not in attendance.

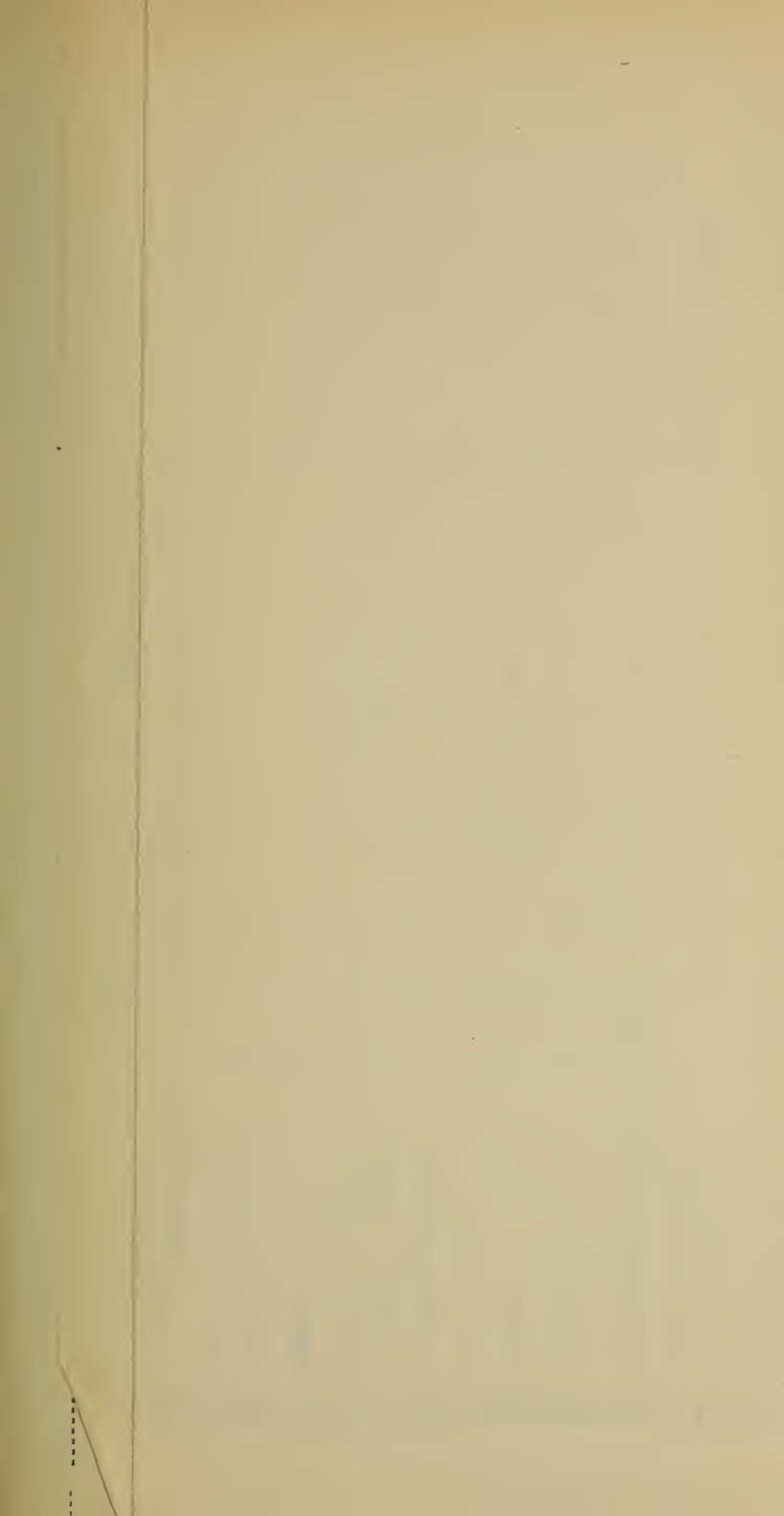
Lestico, Alexander Cameron,
Glencoe.
Lier, Emil Hjalmar, Ashby.
McBroom, Samuel, Danville.
Melvin, Merton Rueben,
Dumont.
Monten, Albin Swan,
Fargo, N. D.
Morstain, William Basil,
Minneapolis.
Niemi, William, Superior, Wis.
Nilsson, Verner Hjalmar,
St. Paul.
Olsen, Carlton Percy,
Minneapolis.
Rexford, Luther Addison,
Minneapolis.
Rollin, Claus Albin, Sweden.
Rowe, Arthur Taylor,
Casselton, N. D.
Selvig, Carlus, Minneapolis.
Smith, Walter Herbert,
Minneapolis.

Strachauer, Arthur Clarence,
Minneapolis.
Styer, Matthias Lafayette,
Caledonia.
Tomasek, Joseph Leo,
Jackson Junction, Iowa.
Turner, George Chester,
Canton.
Wahlstrom, Isidore John,
Minneapolis.
Weaver, Mortimer Ralph,
Spencer, Iowa.
Williams, Walter John,
Minneapolis.
Winter, Wilber McKelvey,
Hamline.
Winther, Conrad Peter,
New Paynesville.
Woodbury, Leslie Maley,
Zumbrota.
Zierold, Arthur Adelbert,
Granite Falls.

UNCLASSED STUDENTS—8.

Britzius, Harry Adam,
Minneapolis.
Carr, Alvin Eugene,
Minneapolis.
Froelich, George Henry,
Winnebago City.
Kendall, Earnest Clayton,
Merrillan, Wis.

Spurr, (M. D.) Stephen Howard,
St. Paul.
Thomas, Howard Weed,
Ellendale, N. D.
Washburn, Reuben Jesse,
Monticello.
Zanner, Frank Millspaugh,
Omaha, Neb.



COLLEGE OF DENTISTRY.

Dated.....

Date of Birth Birthplace.....

Present Address.....

And further, believing him to be a person of good moral character and studious habits, I recommend that he be admitted to the Freshman Class of the COLLEGE OF DENTISTRY, University of Minnesota.

4. (The school officer certifying to the credits below, will please draw a line through the branches not taken and enumerate all others, with time and credits, in the school named.)

The passing grade in this school is.....

..Principal.

Present Residence.

- (1) Twelve one-year credits are required for admission. A "credit" represents the amount of work done in a high school course of thirty-six weeks, five recitations per week. Certificates to be accepted must indicate these facts. It is not essential to give the grade, but the subjects must be marked "Pass" to show they have been successfully completed.
- (2) Students wishing to matriculate in this school, must present credentials signed by a City, County or State Superintendent of Schools, a principal of an accredited High School or Academy, or the State High School Board.
- (3) A separate blank must be filled out for each school attended. Additional ones furnished on request.
- (4) All writing upon this certificate must be done with ink.

THE APPLICANT WILL ALSO FILL OUT WITH CARE THE FOLLOWING.

Name of parent or guardian.....

Post-office address of parent or guardian.....

How long since you attended school?.....

What occupation have you been engaged in since then?.....

Have you had experience in mechanical pursuits, if so what?.....

Have you a natural or acquired taste for mechanics?.....

Is your eyesight good?..... Is your general health good?.....

Give for reference, name, post-office address of your family physician, pastor, or some well known citizen of your town or city.

